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ORIGINAL ARTICLES.

ADDRESS TO THE GRADUATES OF THE TRAINING SCHOOL FOR NURSES OF THE COLORED HOME AND HOSPITAL.

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WHEN I was requested to address you upon an occasion of such interest as this, which gives you authority in the name of your Alma Mater to go forth and practise one of the most useful and excellent callings of civilized life, I accepted the invitation without hesitation for two reasons. First, knowing that great and praiseworthy efforts were being made to increase, expand, and multiply the very insufficient hospital advantages which this city has heretofore extended to its colored citizens, I felt urged by a sense of duty to do what little lay in my power to aid in so noble and so good a work. Second, a peculiarly kind, friendly, I may almost say affectionate, feeling which I have during all my life entertained for the people of your race prompted me to come before you and to bid you Godspeed upon the admirable career which you have selected for your life-work.

The first twenty-one years of my life were passed in South Carolina in the days of slavery. These were spent in immediate contact with people of your race, whose forefathers had lived for three or four generations under the control of mine. It would be almost impossible after all the confusing and misleading literature of the last half-century to convey to your minds the pleasant relations, the entire confidence, the general feeling of friendliness, which in my boyhood existed between the whites and blacks, except in very rare and unfortunate cases. This experience of my past life taught me to appreciate the kindly, gentle, affectionate nature of the children of Ham, and this feeling of my boyhood has never departed from me. You will not wonder that it should not have done so, when I tell you that the good colored woman, who during the period of my infancy acted as my wet-nurse, departed this life only about ten years ago, full of years and respected by the entire community in which she lived.

All this pleasant sentiment was in later years so suddenly and so rudely shattered by the cruel barbarities of war, that there may be some in this hall to-night who feel inclined to doubt the reality of my representations; but I pledge myself that I have dealt in no exaggeration of absolute fact. Let the skeptical turn to the annals of the Revolutionary War, and they will find unquestionable and abundant evidence of the love of the colored man for the white, so full of true devotion as to make him faithful even unto death. Half a century gapes between those days of my youth and to-night, and still the kindly feeling for your race clings to my mind, as the scent of roses to a broken vase!

Knowing the true mental and moral attributes of the colored race, I feel sure that its members have just the traits which will fit them for the calling to which you to-night pledge your devotion; and in saying this I do not by any means confine myself to the female sex. When the experiment, which is being made by the Colored Home and Hospital in reference to women, is extended to the male sex I feel assured that, for the reasons which I have given, it will prove a brilliant success. It is curious to observe how the mental attributes of certain nationalities appear to fit them for special callings. The English excel in all that relates to seamanship and horsemanship; the French instruct the world in the important and subtle art of cooking. This natural adaptability is due to certain inborn qualities, which, being developed by education, give these races an easy ascendency. So my knowledge of your race assures me of a similar adaptability on its part for the profession of nursing, which, with the required training, will lead to excellent results. Far be it from me, however, to prompt you to depend upon any such supposed natural gift for your future success in life. On the contrary, I propose to impress upon you that the day when a nurse can rely for success upon smiling amiability, a wise way of announcing wordy platitudes, and a habit of reciting lengthy cases of wonderful recoveries, has passed away forever. To-day more simple, more rational, and more sensible tests are applied, and she, who in this line of life hopes to win fame, must rely upon real merit, and upon that alone. Captivating manners, a pleasing personality, and a fascinating presence may for a time deceive the patient and her family, but the judicial doctor will never be misled by these, and will surely detect and expose the counterfeit.

This generous and noble community of New York—to my mind, the most attractive known to the world—is "long suffering and of great kindness." The result is that it allows great evils to live, increase, and grow strong without interference for long periods of time. Then it has the habit of crushing them with the sudden power of an enraged giant; even as it has recently done with the corrupt organization which has so long oppressed us politically. So it was when twenty-nine years ago a mere handful of noble, enterprising women overturned the miserable system of nursing, then extant, and laid the physicians and community of New York under a heavy debt of gratitude by establishing in its stead the system of trained nurses, into whose ranks you have the honor of entering to-night. As if by the

wand of an enchanter, old things in nursing passed away and all things became new. In the place of old and incompetent women, they gave us young and vigorous ones; for ignorance, they substituted intelligence and brightness; for uncouth and irregular methods, thorough training; and for want of discipline, loyalty and devotion to the physician, which give him comfort and support in the most trying hours of his life. A trained army was substituted for a huge militia band; confidence for uncertainty and doubt. All honor, credit, praise, and thanks to the noble women, who have proved the truth of the poet's assertion that "peace hath her victories, no less renowned than those of war." Think for a moment of the many aspects of the benefit which these women have bestowed upon the community. The first advantage which resulted from their labors affected the sick; the second, their families; the third, the physicians; and the fourth, thousands upon thousands of young women, who were not only willing to labor in the new field thus opened to them, but grateful for the opportunity afforded them. When the wonderful change was effected, the world stood amazed at the suddenness, completeness, and apparent ease with which it had been accomplished.

Nothing is further from my mind than the wish to charge the evils of the old system upon the kindly and good women who did their best to make it as efficient as they possibly could. Ah, I pathetically recall too many of these faithful and devoted old nurses with affectionate reminiscence, for this injustice to be possible at my hands! They were merely parts of a poor and inefficient system constructed and fostered by society and not by themselves. May their good deeds be remembered with gratitude and may their souls rest in peace!

Seventeen years ago I delivered an address on an occasion like this, to a graduating class of nurses, in which I pointed out to them the shortcomings which are commonly charged against the trained nurse. Time has so little changed the circumstances that I offer similar suggestions to you to-night, for the purpose of urging upon you the avoidance of pitfalls which will lie directly in your path. Do not be discouraged or cast down from their enumeration, but feel assured that they are brought to your notice from a sincere interest in your welfare, and an abiding hope that, when you encounter them, the words which you hear to-night may prompt you to recognize and avoid them.

1. It is very generally said that the trained nurse often gives so much trouble in the families into which she is called that the advantages of her presence are surpassed by the annoyance which commonly results from it in domestic affairs. Remember that you go to patients' houses at a time when they are deranged by sickness; that you are merely an employee in such houses, that every particle of trouble which you give will be registered against you, will work to your injury throughout the community in which you live, and by the patronage of which you must thrive.

2. We have arrived at a period in the world's history when it is no longer believed that disease is propagated in some occult and mysterious way. When measles, scarlatina, smallpox, or septicemia develop, they are now regarded as the results of disease germs which, attaching themselves to the bodies of individuals, or floating freely in the atmosphere, are wafted from person to person, as the pollen is carried from flower to flower. This entity, the disease germ, strikes down an individual, even as the bullet strikes down the soldier, by its own inherent power. Now these germs are readily carried from house to house, and from individual to individual by the clothing; the nurse who arrays herself in garments not susceptible of washing and thorough disinfection is guilty of criminal recklessness.

3. When you are called upon to nurse for an obscure and unknown physician, one perhaps, whose life has been passed in the depths of the country districts, beware how you presume to ignore him, to despise his authority, and to set your opinions up against his dicta. Remember that you are the nurse in the case, that a nurse's duty is to obey the physician's orders. Are you convinced that he is an ignorant and inefficient man? That is not your affair. Those who employ you employ him, and they employ you not to keep the physician of their choice in order, but to obey his behests, whatever they may be.

4. Regard no duty connected with your office as too menial for your hands; refuse no reasonable request which appertains to the duty of nurse; but render yourselves so perfect in the performance of the smallest details that they shall lose their menial aspect and appear worthy of your hands by reason of the skill which you display in ther performance.

If I proceed further I fear that you will ask yourselves, "Has he not yet done with this list of shortcomings, this array of faults with which, he says, our guild is charged?" Bear with me for one more and one very important piece of advice.

5. Let everything which you learn in the capacity of nurse in any household meet its tomb in your ear! Tell nothing good or bad concerning families in which you serve; for, if you talk of the good, the mention of the bad will assuredly follow, even as the "sparks fly upward." In times of illness the secrets of a family cannot be hidden from your ken; the closet doors are open, and the eyes of the midnight watching nurse cannot fail to see the skeletons which hide within! Can you suggest to me anything more contemptible, more deeply sunk beneath the dignity of womanhood, more repulsive to propriety, than the treacherous exposure of the poor bleeding wounds of sorrowing households to the public gaze and to the gossip's tongue?

An Eastern tale is told of a hakim who, coming forth from the Sultan's palace, was asked, "How does the Sultan?" "The Sultan sleeps," he re-

plied. In one hour from that time he was exiled from Turkey, and told that he had just escaped the bowstring because he had dared to tell the secrets of the Sutan's palace to the world. Learn as little as you can of the domestic affairs of households into the bosoms of which you are admitted, and that little keep within your breasts shut up, as secrets entrusted to your honor!

Let me in all seriousness sketch for you, with pen, not with brush, the type of a model nurse, relying upon a full and lengthy experience for the correctness of my work. She stands before me at this moment, not as one whom I have really known, but as one of a class which in my professional career has been a large one. She is a comely, wholesome woman, not pretty, not handsome, but blessed with an honest countenance, which says as plain as whisper in the ear, "You can trust me." For a long time I tried to find out why it was that she was so generally popular, not as a woman, mind you, but as a woman-nurse, and after abundant experience I decided that it was because she had a heart which was full of amiability, kindliness, loyalty, and truth. Of her attainments I have little to say, for she is, as a matter of fact, only equal to the average. I have found that average good enough for all my demands, and I have sometimes found some of the brightest, most talented nurses to be the least attractive and agreeable of women in the sick-room. My model nurse is quiet, not talkative, not boastful, not inclined to become very intimate with patients, patients' friends, or doctors, but polite and friendly with all of them. She seems to be impressed with the idea that she is a nurse, not a friend or companion. I will not tell you of her faithfulness to the sick, or of her loyalty to the physician; because those virtues are so very general among trained nurses. She has one peculiarity, which if any of you lack, you need not mourn, for it may readily be cultivated; it is a well-modulated and sweet voice. If she has to announce to family or physician that the patient will be dead within an hour, it mitigates the terrors of the awful news, and as far as this is possible lessens the inevitable shock of the announcement.

My nurse is now approaching the end of that career through which I have with so much interest watched her passing serenely onward, shedding brightness, courage, faith, and hope upon all who have come within the circle of her benign influence! There is no reason why any one of you should not accomplish all that she has done and at the end win the praise which I give to her.

And now, Graduates, in saying farewell, let me cordially and sincerely bid you Godspeed upon the useful and beneficent career which you have adopted. May your labors in the future serve to carry comfort, hope and health to many a suffering couch; may your efforts at maintaining yourselves as dignified and independent women meet with that success which energy and industry ever command; and may you at the end of well-spent lives have cause to look back upon the ceremonies of to-night and upon those whose hearts at this moment beat in kindly sympathy with you with pleasant and grateful recollections.

HEREDITY.*

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THE individual who comes into the world is, as Luys[1] remarks, but one link in a long chain unrolled by time whose first links are lost in the dim past. His ancestors are not merely his parents, but their progenitors likewise. These parents may have had ancestors of different type, with qualities seemingly absent in the child, which reappear in its descendants. Embryological demonstrations to the contrary notwithstanding, father and son are regarded as one being having two births, each time leading, as Moreau[2] (de Tours) remarks, the same life under the same conditions. Heredity is usually acepted as an expression of the inseparable entity of the individual. Man is regarded, not as a complex balance of cells organs, and resultant function, but as complete from the outset. This conception, fundamentally unsound, further refers the leading part to the parent who plays the least important rôle. The ovum, not the spermatozoon, is the factor in the development. Development regarded as settled and uninfluenced by environment until extra-uterine life has begun, pursues only an upward process.

Intra-uterine life, however, has an environment varying with shifting maternal conditions which governs fetal nutrition and development. All vertebrate embryos assume several forms successively, before definitely differentiating. Supernumerary organs exist in these common forms as phases of embryonic life. From this necessarily arises the united rôle of development (the creative phase of evolution) and degeneracy (the suppressed phase). Evolution of an organ or of its different parts is degenerative if it tend to the ultimate abolition of that organ or of its parts. Evolution is progressive if it tend to development likewise. Degeneracy and development, in the human fetus, passing successively through all vertebrate embryonic stages, play an essential part in the disappearance of lower vertebrate organs for the benefit of typically human organs. The balance between them governs proper evolution in intra-uterine life of the compound animal man. In embryonic development, organs, as De Moor[3] points out, do not always repeat successive phases through which they pass during evolution. While recapitulation of ancestral stages occurs, evolution often takes place

* Read in outline before the Section on Nervous and Mental Disease of the American Medical Association, June, 1901.

without leaving traces of some stages. This is especially true of complex organs arising by many lines of evolution converging in a single structure which becomes the seat of special functions or sets of functions. The neuron passes successively through stages corresponding to those of adult fish, frog, bird, and mammal. Here development consists of increasing cell complexity without formation of unnecessary rudimentary parts. The amount of assimilable nutriment for the fetus being fixed,[4] a struggle for existence results through the law of economy of growth by which, as Roux[5] has shown, less important structures suffer for the benefit of the organism as a whole. Through this law, cells surrender reproductive powers and other functions to secure greater specialization of one function for the benefit of the organism. Local atrophies, hypertrophies and degenerations hence are required to develop the child from the mass of contending embryonic possibilities. Potentialities of lower vertebrate structures and organs develop at certain stages in human intra-uterine life to retrogress in preparation for the next higher stage. To carry the organism through these peroids of stress, not only is an initial velocity given by heredity needed, but likewise favoring environment.

The initial velocity arises from factors furnished from the ovum and minor elements from the spermatozoon. The ovum, partly the product of female heredity, is largely affected by female environment up to the time of conception. To a lesser degree this is also true of the spermatozoon. The greater influence of the ovum is shown in the imperfect occurrence of parthenogenesis in even the highest vertebrates. Phenomena of certain ovarian cysts demonstrate this to be the case even in woman. The spermatozoon simply adds nutriment to the ovum, determining to a limited degree type of development, but only to a minor extent initiating this. Bisexual reproduction resultant on the law of economy of growth enables reproduction to occur with less waste of force and material than unisexual. The interests of the individual and the race in reproduction therefore conflict, as Herbert Spencer long ago demonstrated. Since it is impossible that these two forces should counterbalance, equilibrium must reestablish itself in orderly fashion. The two forces preservative of every animal group (the impulse of every individual to self-preservation and the impulse to the production of other individuals) must vary in an inverse ratio. One must diminish when the other augments. Degeneration is a process of disintegration, the reverse of development or integration. Hence, if the processes which complete and sustain individual life be termed individuation and those which aid formation and development of new individuals be termed generation, individuation and generation are necessarily antagonistic. The higher and larger organisms never reproduce unisexually, the lower and smaller organisms reproduce with marked rapidity by this method. Between these extremes unisexual reproduction decreases while size augments. When growth of the individual is rapid reproductive organs are imperfectly developed and inactive. Reproduction, hence, indicates decrease in intensity of growth and may cause cessation. Great fecundity is always attended by marked mortality. Each superior degree of organic evolution is accompanied by an inferior degree of fecundity. The greater the germ the less is the individuation and *vice versa*. The greater and more complex the organism, the less is the power of multiplication.

An exaggerated estimate of the significance of these facts led Weismann[6] to maintain that there was a specially organized living hereditary substance which unlike the substance composing the perishable body of the individual is, in all multicelluar organisms, transmitted from generation to generation. Here is obvious the old error of organism entity at conception mingled with a half truth as to type preservation.

In determining retrogressive change for advance two factors are in alliance against two others. Type heredity and family heredity or immediate atavism oppose distant atavism and immediate heredity. Atavism does not necessarily imply type degeneracy. From the conflict of these forces it is obvious that conditions favoring direct heredity can but seldom occur. The embryological basis of Weismann's hypothesis was the assumption that the first division of the cell or ovum was into body plasm and germ plasm. The phenomena of asexual reproduction shown in the experiments on invertebrates of J. Loeb[7] had thrown doubt on this assumption and had strengthened the results contradictory of Weismann, obvious in the experiments in reproduction of double monsters by E. C. Spitzka,[8] Dareste, Duval and others. The embryologic basis of Weismannism was completely demolished by experiments in the Naples Aquarium,[11] demonstrating that even when the cell divided sixteen times, separate cells, dissociated from the group, could pursue a separate existence and become well-developed organisms of the parent type. Weismann, forced to a partial though concealed abandonment of his central position, had admitted in his last work that "the origin of a variation equally independent of selection and amphimixis is due to the constant occurrence of slight inequalities of nutrition in the germ plasm. These variations are at first infinitesimal but may accumulate, and in fact they must do so when the modified conditions of nutrition which gave rise to them have lasted for several generations. But although it is improbable that individual variability can depend on a direct action of external influence upon the germ cells and their contained germ plasm, which must be very difficult to change, yet it is by no means to be implied that this structure may not possibly be altered by influences of the same kind continuing for a very long time."

Disturbance of the balance governing embryo-

logical development causes reversion to the excessive fecundity of the earlier biological types. Such reversion produces conditions summarized half a century ago by Moreau (de Tours) into the following categories: First, absence of conception; second, retardation of conception; third, imperfect conception; fourth, incomplete products (monstrosities); fifth, products whose mental, moral and physical constitution is imperfect; sixth, products specially exposed to nervous disorders in order of frequency as follows: epilepsy, imbecility or idiocy, deaf-mutism, insanity, cerebral paralysis and other cerebral disorders; seventh, lymphatic products predisposed to tuberculosis and allied disorders; eighth, products which die in infancy in a greater proportion than sound infants under the same condition; ninth, products which although they escape stress of infancy are less adapted than others to resist disease and death. The absence of conception is generally due to intense cellular proliferation in the ovum.

Degeneracy hence, so far as heredity is concerned, is not an introduction of new factors in the shape of acquired effects, but reversion to lower types of cells, organs and functions. Conditions, as Bland Sutton[9] shows, pathological in one animal are often physiological in another. As embryology demonstrates, conditions physiological at one phase of embryonic development are pathological at another. These conditions frequently result moreover from destruction of inhibitions which permit functions to exceed normal limits. Pathology consists, as Virchow[10] shows, merely in the introduction of a new factor into the organism. Change from one species into another either in individual animals or plants or individuals or their tissues cannot take place without anomaly, since without anomaly such new departure is impossible; the physiological norm hitherto subsisting is changed, which change cannot well be called anything but anomaly. Formerly an anomaly was called pathos. In this sense every departure from the normal is a pathological event. Such pathological event may be caused by an external force, a chemical substance or a physical agent, producing in the norm an anomaly (pathos). This may become an hereditary foundation for characteristics propagated in a family. These belong to pathology, though they produce no injury. Pathological does not mean harmful nor does it indicate disease. Disease in Greek is *nosos* and it is nosology that is concerned with disease. The pathological may sometimes be an advantage to its inheritor.

The Weismannian doctrine, anent non-inheritance of acquired characters, may be true if the sense in which acquired is ordinarily employed be accepted, especially since, as Weismann admits,[12] conditions like tuberculosis may produce "habits" in the ancestor which may be transmitted to the descendant. These "habits" consist in structural peculiarities, such as narrowness of the chest, etc. The conflict between the extreme hereditary doctrine and the Weismannian denial of inheritance of acquired characters or variation, has been harmonized by Roux, who shows that, by the law of economy of growth, there occurs an internal or physiological struggle for existence between organs, cells and protoplasmic molecules of the organism. Hence in heredity surrounding forces are always necessary, not simply the condition of activity by an essential element of the final product.

How far initial velocity from heredity may carry the product of conception is determined by the intensity of the initial velocity and the nature of the environment at periods of intra- and extra-uterine life. At such periods through suppressive economy certain parts in the evolution of organs disappear and in the evolution of organisms certain organs. Since disappearing and developing tendencies necessarily center around the time when functions are to be lost by the disappearing and others gained by the developing, periods of stress appear around which occur the struggle for existence between parts of organs and between organs themselves.

The human embryo has potentialities of ancestral gains as well as lower vertebrate possibilities. It does not attain to the full the potentialities of its ancestral gains, since gains of the individual under the law of individuation are sacrificed to race reproduction. The child with its relatively enormous head, its large protuberant abdomen, its small chest, short feeble legs, comparatively vigorous arms, smooth almost hairless skin, large liver, kidneys, thymus and suprarenal capsules, presents, as Havelock Ellis[13] remarks, an anatomical picture distinct from that of the adult. The indications of the child's physiological and psychical life are in the same direction. Anthropoid apes at an early life period are unlike the adults. The young anthropoid is comparatively human, while the adult is comparatively bestial. The young ape has a smooth globular head and relatively small face like man. The profile is more human, with little prognathism, the skull base is more humanly formed than that of the adult and the brain is relatively very much larger. The gorilla fetus differs from the adult in a much larger head, a longer neck, a more slender trunk, shorter thumb and greater toe. The head is more globular, the face less prognathous and the hand more man-like. Here the fetal gorilla approaches man. The adult rapidly develops into a condition far removed from this man-like state. The brain becomes relatively very small, the skull becomes hideous with huge bony crests, outstanding superciliary ridges, projecting jaws and receding chin. The dark hairy body becomes more bestial. The female ape remains midway between the infantile and the adult male condition.

So far as man is ape-like he resembles the infantile ape, not the adult. Man falls away more and more from the specifically human type of early years. The ape in a short life goes further along the line of premature senility. He starts in

life with marked human endowment, but soon falls far from it. Man starts in life with a still greater endowment but to a lesser extent falls from it, in adult life approaching the ape. Up to and soon after birth the higher animals, like the apes and man, have for a time rapid vigorous movement upward in zoological evolution, his fetal or infantile development, ceasing to be upward, is later so directed as to answer to life wants of the species. Henceforth and throughout life, a development of lower characters, a slow movement toward degeneration and senility occurs which is necessary to ensure preservation and stability of the individual and species. Fetal evolution sheltered from the world is in an abstractly upward direction. After birth, further development is a concrete adaptation to the environment conflicting with upward zoological movement. The infantile condition in man and ape approximates most the human condition. The adult condition approximates the anthropoid. The human infant has, in exaggerated form, the chief distinctive human characteristics, large head and brain, small face, hairlessness and delicate bony system. The adult form is erroneously assumed to be more highly developed than the infantile. From the standpoint of adaptation to environment the hairy, large-boned, small-brained gorilla is better fitted to survive in the struggle for existence than his delicate offspring. From a zoological point of view anything but progress occurs.

From about the third year onward in man growth, though a necessary adaptation, is to some extent growth in degeneration and senility. By it man is brought somewhat nearer the apes. Among the higher races such growth is less marked than among the lower. The child of many lower races is scarcely if at all less intelligent than the child of the higher. As he grows up the lower child becomes stupid and obtuse and all social life falls into hide-bound routine. The higher retains much child-like vivacity. The highest human types represented in typical men of genius strikingly approximate the child type.

Initial hereditary velocity is apt to be affected by maternal environment at two great periods of intra-uterine stress, like the senile (or simian) period (which occurs four and a half months after conception) and the period of sex differentiation.[14] Arrested development at the senile period of intra-uterine life by any process, which checks evolution, may influence extra-uterine development. When produced by syphilis (to which the senile appearance of new-born children is so frequently due) the child, because of organs which have undergone premature senescence, fails to pass through the first dentition or readily falls a victim to infections. Precocity, whether intellectual or physical, expresses arrest of development at the senile period which causes the child to pass through the period of growth and senescence rapidly. The truth of the popular opinion of precocity (early ripe, early rotten) is very demonstrable. Of six cases[15] of early puberty in boys, one, virile at one year, died senile at five. A girl menstruated at two, became pregnant at eight, a grandmother and senile at twenty-five. Premature senility may evince itself in arterial atheroma at the periods of extra-uterine stress. This has been observed frequently in the children of vegetarians and after the essential fevers.

If initial hereditary velocity be tinctured with senility at this period, the individual fails to reach the high promise of the child. This often results from the struggle for existence between the reproductive system (representing the race) and the central nervous system (representing the individual). The senile tendency is therefore aided by gains of the reproductive system at the period of sex differentiation. Sex, as Drusing[16] has shown, is not inherited, but results from various factors acting not only at the time of impregnation, but at various times thereafter. Long after impregnation, when the embryo is already developed, nutrition is still influential and may change the tendency even after sexual organs have developed. Poor maternal nutrition may arrest female development, causing reversion to the male type. The psychic side of sexual differences should normally, as it often does, remain undifferentiated until adolescence. Adolescence is affected by atavistic tendency to simian senility, which implies its early onset.

The psychic phase of instincts so fundamental as the reproductive instinct may appear even when there is congenital absence or rudimentary development of organs upon which its expression depends.[17] Psycho-sexual manifestations may remain indifferent until adolescence, may be of homosexual type (the same sex), may be of heterosexual type (opposite sex), or may be hermaphroditic (both sexes). Three conditions (infantilism, masculinism and feminism) and a mixed state may result from arrested development before, at, and after sex differentiation. As the inferior organs and sex nerves are differentiated ere the psychic phase, this side of sex may be determined only in extra-uterine life. All three conditions are arrested developments of child type potentialities.

The struggle for existence between the central nervous system and the reproductive system usually occurs with greatest intensity between fourteen and twenty-five. The break-downs at this period are expressed in hebephrenia, dementia præcox, and other psychoses of puberty and adolescence. From the puberty struggle for existence between the chondrocranium[18] (primitive skull developed from the vertebræ) and its later type as supplemented by the dermal bones, the nervous system may take a distorted ply, arresting bodily, nervous and mental development. Infantilism arrests the potentialities of the child. Body and face remain at the child-point, or body and nervous system are checked, or the nervous system or certain organs alone are affected, while the body goes on to full development. The

face may be arrested at any period from birth to puberty, hence many persons retain a youthful appearance throughout life. These people are often vain, egotistic and of weak mental and moral stamina. The females are often sexually anesthetic, harlots, and allied beings, like prurient prudes, hysterical reformers or gossip-mongers.

As the female type most nearly approximates the potentialities of the child, arrests of its development may result in masculinism and feminism. The female may proceed so far in development as to have female organs and their functions, while retaining predominant traces of the male. The male may proceed toward the female type, but ere full sex differentiation occurs further development has been checked and the male type becomes predominant. Arrested development may take place at any stage in embryogeny. The male preserves female breasts while normal in other respects or presents crypt orchidism or sloping shoulders while otherwise masculine. His nervous system may take such a ply that at puberty the sexual instinct is feminine in type. This may extend merely to extreme modesty toward males, and intense liking for female occupations or a disgust for those of the male.[19] In the female, identical conditions occur.

The sexo-psychic side is sometimes entirely dormant until adolescence. Education, then, may give sex direction rather than innate tendency. A male underwent arrest of development in evolution toward the female type, and had been brought up as a girl. "He" had pleasing womanly qualities and was married thrice to intensely devoted husbands. The real sex was not suspected until necropsy demonstrated that the supposed woman was a man. Where the nervous system has taken one sexual ply while the body has taken another, beings result which need careful special training during infancy, childhood and adolescence. Sometimes these beings present in addition to the sexual distortion, mental defect or moral obliquity or both.

In higher and lower races tendency to sex predominance is in different direction. The lower race female resembles the male of her race. The man of the higher races resembles in mentality and pelvis the woman of his race. This is partly due to intrusion in the course of evolution by the male on female occupations. All occupations other than war, hunting and fishing, were created by woman.[20] The higher race male, while taking on female intellectual and esthetic qualities, retains male mental and physical sexual characteristics which, in accordance with evolution, are less explosively manifested than in the male of primitive races. While sex differentiation as to special sex organs may not be arrested at this period, still normal sex development may be so affected as to produce premature sexual appetite expressions evident in generalized pleasure[21] rather than conscious sex direction. Such often occur in healthy girls under one year without genito-urinary irritation. This generalized pleasure underlies that auto-erotism of future life into which, as Havelock Ellis has pointed out, the sexual emotion may be absorbed and even entirely lost in self-admiration. This Narcissus-like tendency of which the normal germ is symbolized by the mirror is sometimes found in men. In women it occurs sometimes in association with an attraction for other persons to which it is normally subservient. In the extreme form there is indifference to sexual gratification or admiration of the opposite or the same sex.

Among factors usually accepted as part of heredity are congenital influences arising from maternal environment during pregnancy. Pregnancy, according to Virchow's definition, is pathological so far as the mother is concerned, since it disturbs the physiological balance previously existing in her. With recurring pregnancies the reaction to this pathological factor tends to decrease unless aided by other influences. Since the physiological balance of the mother is disturbed she becomes more susceptible to outside influences. From such susceptibility variations in fetal environment result. These underlie the so-called "maternal impressions." The fetus very decidedly reacts to sensory impressions on the mother. Women, as Féré[22] has shown, often in an ordinary dream producing but very moderate excitation, not as a rule interrupting sleep, are awakened by fetal movements. The dreams have nothing of the nightmare character, but are ordinary phenomena of sleep. Maternal mental changes hence excite fetal motor reactions which, like sensorial excitations, are stronger in the fetus than in the mother. The mechanism of these is due to unconscious movement of the uterine muscular wall.

Such factors entering into fetal environment influence progress. Maternal strength hence plays an important part. Much alleged heredity, charged to paternal defects, arises from the influence of these on maternal nutrition. Albeit paternal deficiencies are present at marriage, the influence of these is very often not obvious until one or more children have been born. The influences of paternal defects in producing maternal neurasthenia must therefore be taken into account.

Most hereditary defects are expressions of weakness along lines of least resistance and not due to direct inheritance. Epilepsy is often an expression of inability to pass periods of stress without motor explosions. It therefore expresses an arrest of development at certain phases in childhood. Through ignorance of this fact convulsive disorders of childhood often pass into epilepsy. Through that law of the nervous system whereby nerve action, once occurring, has a tendency to recur, habits are established and likewise quasi-periodic disorders like epilepsy. Weismann sciolistically charges epilepsy to microbes, explaining its greater maternal transmission by the exceedingly crude notion that since the ovum can carry more microbes than

the spermatozoon, epilepsy occurs more frequently from maternal heredity. The "habit" transmission of Weismann, however, explains the origin of epilepsy more logically than his bacteriological Pegasus.

From the standpoints of embryology, biology and pathology, direct inheritance of aught but systemic vigor or weakness, taking the line of least resistance, may be doubted. Weismann's position, so limited, seems justifiable.

The impact on the initial velocity of heredity enables it to pass through or be arrested at the periods of stress. The effects of such arrests are determined by the points of least resistance. Such points of least resistance are transitory structures like the hair, ears, teeth, jaws, as well as the later acquirements of the race.

Under the law of economy of growth, arrested development may produce excessive growth or atrophy or both. In this way a scion of degeneracy often gains in nervous system and brain what is lost elsewhere. Whether a pathological result is beneficial or detrimental must be determined by the law of relativity, not by the pathological event itself.

That acquired defects sometimes exert an influence in determining the line of least resistance is shown by the results of circumcision. Medical opinion to the contrary notwithstanding, Jews are born with a partially-developed or absent prepuce so frequently that no comparison can be made with the non-circumcising races. The centuries old Talmudic discussion anent Jewish Ritual[23] to be followed in cases where the boy is born without prepuce significantly demonstrates the frequency of this, since theologians do not cross a theological bridge in ritual until they come to it. Furthermore, conditions resultant from the "habit" inheritance admitted by Weismann provide an ample line of least resistance sufficiently explicatory of the seeming inheritance of acquired characters.

This is excellently illustrated in a family whose history I reported four years ago.[24] The family originated in the Eastern States, but branched southward and westward. A farmer lived twenty miles distant from his nearest neighbor whose only daughter he married. She led a lonely life till her courtship at the age of twenty-eight by the farmer, then three years younger. The farmer married her for $200, after having impregnated her. He then found lead on his farm and went to a city. A stock company bought his farm and launched him into the stock market, where he made money, more as a cunning tool than adventurer. He became a high liver, gouty and dyspeptic and died from gouty kidney at the age of seventy years. The couple had five children. The eldest child became a "Napoleon of Finance," had his father's cunning and died wealthy within the pale of the law. He married a society woman; the last scion of an old family. The second child (a daughter) was clubfooted and early suffered from gouty tophi. She married a society man of an old family who had cleft palate. The third child (a daughter) had congenital strabismus. She married a man who had irregular migraine. The fourth child (a daughter) was normal. She married a thirty-year-old businessman, in whom ataxia developed a year after marriage. The fifth child (a son) was ataxic at eighteen. The scions of the "Napoleon of Finance" and the society woman were an imbecile son, a hysteric, a female epileptic who had a double uterus, a nymphomaniac, and a society man who wrote verses. The cleft-palated society man and clubfooted woman had triplets born dead and a strabismic, migrainous son who, left penniless by his father, married his cousin, the nymphomaniac daughter of the "Napoleon of Finance," after being detected in an intrigue with her. The migrainous man and strabismic daughter of the farmer stock-broker had a sexual invert masculine daughter, a daughter subject to periodical epistaxis, irrespective of menstruation, as well as chorea during childhood, a normal daughter, a deaf-mute, a phthisical son, a cloacal daughter, an ameliac son, a cyclopic daughter born dead and a normal son. The sexual invert married the versifier son of the "Napoleon of Finance." The progeny of the normal daughter of the farmer stock-broker and the ataxic man were a dead-born sarcomatous son, a gouty son with early tophi, twin boys paralyzed in infancy, twin girls (normal), a normal son, and a son ataxic at fourteen. The progeny of the nymphomaniac and her strabismic, migrainous cousin were a ne'er-do-well, a periodical lunatic, a dipsomaniac daughter (who died of gastric cancer), deformed triplets who died at birth, an epileptic imbecile son, a hermaphrodite, a prostitute, a double monster born dead, a normal daughter, and a paranoiac son. The ne'er-do-well married his epistaxic cousin. The gouty son of the farmer's normal daughter married the hysteric daughter of the "Napoleon of Finance." They had a son born with unilateral asymmetry, a prostitute, dead triplets, a male sexual invert, a color-blind daughter, and a normal son. The color-blind daughter married a paranoiac grandson of the "Napoleon of Finance." The progeny of the sexual invert and the versifier (who were soon divorced) were a periodical nymphomaniac, who had some artistic and literary talent, and a son, who died of gastric cancer. The scion of the ne'er-do-well and the epistaxic woman were a moral imbecile, a "bleeder," a stammering daughter who had uvula deformity, a deaf-mute cryptorchid, dead-born triplets, an infantile paralytic son and dead-born quadruplets. The progeny of the paranoiac and his color-blind cousin were an exophthalmic daughter, an epileptic cryptorchid, a cleft-palated imbecile with a cloaca, dead-born quadruplets, an idiot boy, and a "bleeder."

Among the factors influencing points of least resistance are toxic products from maternal autointoxication and toxins of various contagions and infections. Decades ago alienistic biologists observed that similar degeneracy stigmata re-

sulted in the offspring of the tuberculous, syphilitic and neuropathic. During the reaction from the early views as to the intensely specific nature of luetic consequences, which the elder Fournier led, it became evident that the non-specific effects of luetic heredity were as marked as the specific. The ground-work for this view was experimentally demonstrated by Charrin and Gley[25] in researches upon the influence of parental reception of virus on the offspring. The bacillus of blue pus or its toxins was inoculated. The results were not uniform. Most frequently, sterility, abortion or birth of progeny ensued. The offspring, in rare instances, survived; more rarely still were they healthy. Rabbits born of these undeveloped animals sometimes had enormous epiphyses, the diaphyses being shortened. Of five rabbits born of one pair inoculated, two were normal and a third (whose ears were rudimentary) died in a few days. The ears in the other two were fragmentary with jagged upper edges. The tails were two centimeters long. The external orifice of the vagina (one rabbit was male and the other a female) was oblique. One of the limbs (the hind in the male and the fore in the female) was much shorter than its fellow and ended in a stump, there being no foot nor toes. The results of these experiments are borne out by careful analysis of the effect of syphilis, tuberculosis and allied contagions on the offspring. As E. Fournier[26] and others have shown these may have nothing specific *per se*, but are evinced in congenital inferiority of constitution, of temperament, of vital resistance or in retardation, arrest or imperfection of development, mental or physical or in manifest organic changes; either organ malformations or monstrosities. Toxins produced by germs or poisons produced by maternal nutritional defects may cause arrest, retardation, or imperfection of development of children of otherwise healthy mothers suffering from contagions and infectious or nutritional disorders or defects just precedent to, or during pregnancy, or during lactation. During periods of stress, moreover, toxins or allied substances generated in the child's organs may cause bony and dental arrests, retardations and imperfections of development, so frequently noticed after scarlatina, pneumonia, crebrospinal fever, etc., as well as in rickets and in allied conditions during infancy and childhood. Here two factors are evident, the weakened constitution of the ancestor which, as even Weismann admits, may affect the germ plasm, and, second, the toxemic state that affects fetal nutrition. Strictly speaking, this last cannot be called a hereditary factor, albeit it results from weakened maternal nutrition.

The origin and character of defects and gains depend so far as beneficial or deteriorating influence is concerned upon the law of relativity. A lengthy discussion of the relation of genius to degeneracy has resulted from non-recognition of this factor. Genius, according to Huxley,[27] is innate capacity of any kind above the average mental level. From a biological point of view a genius among men stands in the same position as a "sport" among animals and plants and is a product of that variability which is the postulate of selection, both natural and artificial. On the general ground that a strong and therefore markedly abnormal variety is, *ipso facto*, not likely to be so well in harmony with existing conditions as the normal standard (which has been brought to what it is largely by the operation of those conditions), a large proportion of "genius sports" are likely to come to grief physically and socially and the intensity of feeling which is one of the conditions of genius is especially liable to run into insanity.

Genius sometimes has such relationships, but they are not necessary to it. The fact that the highest promise of the child type is shown in the adult by the genius emphatically destroys the claim that genius is still a "sport."

The genius, as Herbert Spencer[28] has shown, is, together with the whole generation of which he forms a part along with its institutions, its language, manners and multitudinous arts and appliances, a resultant. Genius depends upon the long series of complex influences which have produced the race in which it appears and the social state into which that race has grown. All the things of which the genius is the proximate initiator have their chief causes in the generation from which he descends. The more the "sport" appears in the genius, the further he departs from race types in the direction of degeneracy. Not in the genius, but in the "sport" element is shown the deficiency. The genius is an expression of race gains that have survived intra- and extra-uterine periods of stress as well as race senescing influences.

Environment during puberty and the formative periods determines properly-balanced development of genius. Undue intrusion of the reproductive element sacrifices the individual to the race. This element marred the otherwise complete self-culture of that excellently-balanced genius, Goethe, who was *facile princeps* as poet, philosopher, experimental scientist and sociologist. The influence of environment crushes out many a potential Goethe, as Ruskin has shown. The law of economy of growth produces the genius whether well balanced or of "sport" type.

How far pathological events may favorably influence the future at plastic periods of heredity is shown in Cuvier and to a lesser extent in Sir Walter Scott. Hydrocephalus here prevented premature closure of all sutures permitting dermal bones to supply chondrocranial deficiencies and favoring replacement of cavities which, while not functionally active, gave full scope to nerve tissue. Here a pathological event proved destructive of degenerating factors, preventing retrogression of brain tissue resultant on suture closing.

Heredity obeys no absolute law in details, but is governed by a struggle between contending forces. Initial hereditary velocity is an important factor, but so likewise is intra- and extra-uterine

environment, especially as constituted by maternal strength during intra-uterine periods, during periods of nutrition by the mother, and during periods when the child is under maternal training. Heredity is a prophecy of what *may* be, not a destiny which *must* be.

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THE LIMITATIONS OF MEDICAL THERAPEUTICS.[1]

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THE successful application of remedies to disease has not kept pace with the immense advancement in the knowledge of pathology or of diagnosis during the last ten years.

The instruments of precision in diagnosis, especially the microscope and the various reactions which may be obtained in the bacterial and chemical laboratories, enable one to separate and recognize the differences between the infectious fevers and various other diseases of organs of the blood.

Thus, typhoid fever, malaria, plague, diphtheria, epidemic meningitis, cholera, epidemic dysentery, amebic dysentery, tuberculosis, gonorrhea, tetanus, and relapsing fever may all be recognized with certainty, not only by the clinical course, but by the microscopical examination of the blood and of the exudates, transudates, etc., supplemented by laboratory bacterial and chemical examinations. Of the various diseases not infectious in character, or at least not now recognized as infectious, and the general diseases which affect the blood especially, the present methods of examination enable us to more certainly diagnose and to separate the one from the other.

For instance, the blood is now fairly well understood so far as its morphology is concerned. We recognize ordinarily the primary and the secondary anemias; we differentiate the different types of leucemia; the modern methods of examination of the stomach enable one to recognize with reasonable certainty ulcer and carcinoma, and to differentiate them from the less severe chronic gastritis.

This great advance in our knowledge of the cause of disease and the improved methods of examination which enable us to recognize more certainly and to differentiate disease have had their influence on therapy. This influence, however, has been chiefly in the application of the principle of the production of an artificial immunity and at the same time the introduction into the body of curative antitoxins.

We may be justly proud of the use of the antitoxin serum of diphtheria, of tetanus, of plague, of dysentery, of cholera and of the antivenomous serum in intoxication due to wounds of poisonous serpents, in the cure and prevention of these several diseases. The application also of prophylactic fluids, such as that of Haffkine for plague, and the use of like preparations of fluid for other diseases has been followed by equally good results as compared with the serum-treatment in the prevention of disease. These notable results justify the belief that we shall some day apply the same principle to the treatment of most, if not all, of the infectious diseases.

Until the discovery of these practically specific means of treating the infectious diseases, the only remedies that in any way resembled specific drugs in their effects were mercury and quinine. Empiricism taught us that mercury was almost uniformly curative of syphilis and the specific action of quinine in malaria came in the same way. Even now the accurate knowledge which we have of malaria has enabled us to apply quinine to the relief of the infection more rationally and perhaps with better results than before.

The more exact knowledge we possess of the infectious diseases and of the local and chronic disease processes of the body has enabled us to apply specific medication in a limited way only. If we add to this the drugs quinine and mercury, which empiricism has shown to be practically specific, it still leaves an immense field in medicine in which the application of curative drugs is based upon insecure grounds. The application of drugs in this field can never be exact. Therapeutic practice in consequence must vary and differences of opinion arise in the future as they have in the past. It is to this field of therapy that I especially desire to direct your attention and to say something of its remedies.

For purposes of description I shall divide therapists into three classes to arrive at something definite concerning the limitations of medical therapy, and I shall take up the theories and practice of each one of these three classes.

In the first place I should name the nihilists in therapeutics. To this class belong those among us who are materialists in medicine. The man who works much in the dead-house and in the pathological laboratory and sees with the naked eye or the microscope the morbid changes which occur in organs finds it hard to believe that these conditions can be removed or even modified by drugs. This belief is further strengthened by the

[1] Address on Medicine delivered before the Ohio State Medical Society, at Cincinnati, 1901.

fact that the infectious diseases are self-limited, and, with the exception of malaria and syphilis, have not been influenced in the past by the application of medicines. The surgeon, too, whose field of work is along mechanical lines is apt to lose confidence in drugs as curative agents. His belief or faith in drugs is modified by his operative experience. The disease processes which in some instances his knife so readily removes, he finds it hard to believe may be much modified or even removed by the rational use of drugs. He does not understand that the morbid changes do not kill, but that it is the result of the morbid changes upon the functions of the organs which is disastrous. As an example, chronic interstitial hepatitis rarely, if ever, of itself, kills. The amount of liver tissue left even in extreme atrophic hepatitis is enough to maintain life. The invalid dies because of toxemia due to the loss of the full modifying effect of the liver upon the food-products which pass through it, or to the mechanical effects of the contraction of the cirrhotic tissue upon the venous radicals and the consequent injurious effect upon other organs and also upon the supervening dropsy.

Every rational physician knows that he may not modify the true cause, the liver cirrhosis, but he may materially modify, by proper remedies, the toxemia and the venous stasis and thus relieve suffering and prolong life.

Under the second class of therapists, I would place the theorists. The great majority of us practise under this head. The theorists treat symptoms or the disease, not the individual. He looks upon a disease or even a symptom alone as an entity, which is to be cast out by medication, as devils and evil spirits were in past ages cast out by incantation. He is an extremist, as much so as the nihilist. He looks for specific effects from drugs. Fever from all causes he fights with antipyretics and is happy if the temperature is lowered by the drugs used regardless of the natural course of the disease. Cough, whether of bronchial, of cardiac or of nervous origin, is combated because it is a cough and by similar remedies in all cases.

A chill calls for quinine, whether due to pyogenic cocci, malarial plasmodia, or what not. Anemia calls for iron, whether it be due to malignant disease, faulty hygiene or an unknown cause. This is the therapy of not only our own practitioners, but also that of the physicians we are pleased to term "irregulars." These we hold up to ridicule because of the dogmas they maintain of the specific application of certain remedies to symptoms.

Furthermore, many of the books on materia medica and therapeutics are so arranged that after the exposition of the forms, preparations and physiological action of a drug, there follows a list of the various symptoms and diseases in which it may be used advisedly. This form of practice is still further stimulated in the present day by the elegant, palatable and sightly preparations which the manufacturing pharmacist presents to the practitioner.

In the commercial world the supply follows the demand of a commodity. To the busy country physician, who must often compound his own prescriptions, the preparations of the manufacturing pharmacist were a boon. For this aid, and for the presentation of simple preparations in a presentable form, must we acknowledge thanks. But the manufacturing pharmacist ceases to be our helper when he attempts to present preparations in an elegant form when by so doing he renders them inert. Of what value are most of the tinctures and fluid-extracts in the form of tablet triturates? And if bad in simple form, how much worse if presented as a compound of two or more fluid preparations in a tablet, even if labeled the favorite prescription of some eminent practitioner as a "heart tonic," "laxative," "antidyspeptic," "antipyretic," etc., etc. What, too, of the syrups, elixirs, pills and mixtures with copyrighted names which are presented as specific "cure-alls"?

The pharmacist assumes when he presents to us these compounds, which for all practical purposes are patented, that we do not know enough to prescribe. Yes, he even says we are not able to diagnose a disease, for upon the label is often printed the symptoms for which the compound is a specific.

Let us give credit for all that the manufacturing pharmacist has done for us. We want elegant, sightly, palatable preparations. Let him give them to us, but let it be in forms which will not lessen the virtue of the drug and in simple not compound preparations.

I would name the third class of therapists rationalists. The practice of rational therapy is based upon a thorough knowledge of disease. This includes a knowledge of the pathology, the morbid anatomy, the clinical course and the recognition of the disease by means of all the modern methods and means of diagnosis. Experience is necessary to make a rational therapist. One must have the opportunities to observe the natural course of disease. Books will not afford this. Hospitals give one the best opportunities, but in private practice, in both the country and city, abundant material is at hand to study the natural development and course of disease.

He will make the best therapist who will use the means at his command to recognize the usual and unusual phenomena of disease. In addition to the organs which Nature has given him, the physician has at his command, at comparatively little cost, the modern instruments of precision in diagnosis which may enable him to become very proficient in the recognition of disease processes.

The knowledge thus obtained grows very rapidly and it is true, I believe, that the degree of acquaintance with disease bears an inverse ratio to the use of drugs. A knowledge of pathology and of morbid anatomy must teach one to use drugs sparingly and rationally. With a mental

picture before one of the morbid anatomy of a given disease, the rationalist does not attempt the frequently-impossible removal of the disease, but does try to modify the future development of the process and the results of the disease upon the other important organs of the body.

In surgery, cleanliness has made operations possible upon almost every organ of the body. For years the surgeon used the so-called antiseptic drugs in an attempt to secure freedom from infection in operative wounds. It required a long period of time to teach the surgeon that drugs were not necessary and that true cleanliness meant the use of pure water as an agent to purify operative fields, instruments and dressings. In midwifery, too, the former horrors of childbed have been removed by cleanliness. So true is this in both surgery and obstetrics that infection after operation or childbirth is looked upon as a grave blunder of operator, assistant or nurse in the matter of cleanliness.

In medicine cleanliness is just as important as in surgery. Just now the majority of us do not pay so much attention to it as we should. Medical cleanliness may be obtained, as in surgery, by the use of pure water as a drink, by the various forms of baths, antiseptic-mouth and throat-washes, lavage of the stomach, colonic flushes, etc. These measures of cleanliness not only lessen the element of external and internal infection, but also modify the results of the infection or the intoxication from which the patient suffers in consequence of some general infection or organic, chronic disease. Cleanliness should extend, too, to supplying the patient with pure air and uncontaminated, unadulterated food. These hygienic measures may not be classed with drug-therapy, but if practised will have a definite relation to the use of drugs, inasmuch as it will be found less necessary to prescribe drugs when medical cleanliness is practised. The drugs which the rationalist will use in this event will be directed to an attempt to meet emergencies when they arise in the course of the acute infections, or with the object of forestalling a possible accident, which his experience of the clinical course of disease has taught him may occur. He knows that there is no drug which will shorten the course of the infectious disease, with the exception of quinine in malaria and mercury in syphilis. This does not apply, of course, to the few specific sera. Unhappily, these are still few in number. The principle of the antitoxin treatment has been firmly established, and it is reasonable to hope that we may at no distant day command a specific treatment for all the acute infectious diseases, as we now do in diphtheria, the plague, tetanus, the intoxication due to the bites of venomous serpents, and probably also cholera and epidemic dysentery.

In the local and chronic diseases rational therapy applies as in the acute infectious processes. Here a thorough knowledge of the morbid anatomy of the clinical course and of the interaction of organs and parts of the body is absolutely essential to a rational therapy. Take, for example, a case of chronic interstitial nephritis. The treatment should be based upon the cardio-vascular integrity, upon the total urinary excretion, and upon the nutritional condition of the patient. Empiricism has taught us to use, in this form of chronic nephritis, digitalis, iron and some form of saline diuretic like acetate of potassium. These drugs are often united in a mixture and too often does the unthinking physician prescribe them when the diagnosis is established.

The rationalist would study the cardio-vascular system, the urinary output, and the nutrition of the patient.

If the balance were good he would not prescribe drugs, but would establish a hygiene in the form of diet, water as a diluent drink, proper clothing, and general conduct of life which would tend to maintain this balance of proper integrity of heart, urinary excretion and bodily nutrition.

If drugs were subsequently necessary he would give only such as were necessary to reëstablish the proper balance. Perhaps digitalis would be necessary at one time. Iron, too, perhaps should anemia occur, or, if not iron, some other hematinic, and, if water was not sufficient, perhaps a medicinal diuretic would be prescribed.

Thus the rationalist treats the individual and not the disease.

Nihilistic therapy is not justified by the experience of the past nor by present knowledge in either private or hospital practice. Nihilistic therapy and the symptomatic drug-treatment of the theorist are opposite extremes of practice. Both are wrong and both are supported by ignorance—a want of knowledge of a different kind, it is true.

Clearly, there is a marked limitation in drug-therapy, but still there is a drug-treatment which, if rationally applied, will be of much aid to the physician in combating disease and in alleviating human sufferings.

A HISTORY OF THE ARMY POST EXCHANGE OR CANTEEN.

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THE Army Post Exchange began its history in 1883 as an experiment at Vancouver Barracks by Col. Morrow, and its gradual adoption (1889-1891) throughout the Army has been the work and study of years.

Regulations governing the Canteen had been issued from time to time as arising circumstances required, until a thoroughly practical basis had been reached which was conceded by the vast majority of Army officers to be conducive toward the maintenance of law and order in the regiments. We see that the adoption of the Army Post Exchange was a matter of growth and came about only after careful investigation by men interested in the welfare of the Army. In 1895 the Exchange Regulations were clear and unmistakable in their interpretation and none, who read

conservatively, can claim that it was a promuigator of lawlessness.

It is evident from the above data that the Canteen has existed for over fifteen years, being tried for five years or more prior to its official recognition in 1889, and evidence, backed by statistics, goes to show that drunkenness, alcoholism and desertions have slowly but surely decreased and that the Army Post Exchange has been the most potent factor in bringing about this happy result.

At the Fifty-fifth Congress a bill was introduced with a view to abolishing the Canteen, but, owing to faulty construction, it did not accomplish its object. In this connection I would like to refer to the action of the Committee on Temperance of the Methodist-Episcopal General Conference in session at Chicago, May, 1900, which reported resolutions censuring President McKinley for accepting and acting upon the decision of Attorney-General Griggs that the anti-canteen law as passed by the Fifty-fifth Congress did not prohibit the sale of liquors. It is unnecessary to defend General Griggs for his opinion and, had the Temperance Committee carefully read and digested the Attorney-General's decision as given to the Secretary of War, they would scarcely have taken it upon themselves to attack the action of the President; as it was they only succeeded in making a display of ignorance in regard to legal opinions. General Grigg's decision as presented to the Secretary of War is a masterpiece of clearness and he carefully gives his reasons with the directness of a great legal mind.

The agitation of the Canteen question prompted the Secretary of War to send a circular letter to the commanding officer of every troop, battery, company and regiment, and under date of May 2, 1899, a similar letter to over five hundred of the oldest non-commissioned officers.

Following is a copy of the letter:

"HEADQUARTERS OF THE ARMY.
"ADJUTANT-GENERAL'S OFFICE,
"WASHINGTON, May 2d, 1899.

"SIR: The recent legislation (Section 17 of the Act approved March 2, 1899) in the matter of the sale of liquors by Post Exchange and the interpretation thereof by the Attorney-General (General Orders No. 69, 1899), together with what cannot be regarded as other than an abuse of the privileges accorded by the Exchange Regulations by certain undisciplined organizations during the recent war with Spain, have caused considerable criticism of the Exchange feature of the Army administration.

"With a view to a proper understanding of the situation the Secretary of War desires that commanding officers of every troop, battery, company and regiment in your command be called upon for a report based upon his experience and observation as regards the benefit or injury to the Army in point of temperance, morality and discipline as a result of the Exchange system and particularly as to the sale of beer.

"It has been publicly asserted by the opponents of the Exchange system that officers of the Army are restrained from expressing their true opinion on the subject by reason of the belief that the War Department has determined to maintain the Exchange in spite of opposition. The Secretary desires that such an impression be at once dispelled. In these reports, so long as they do not violate good taste and official decorum, the utmost latitude of opinion is invited in order that the Secretary may be in a position to place before Congress at the next session a correct report of the merits and defects of the Exchange system as seen by those best qualified to judge.

"In order that the replies to these inquiries may be as uniform as possible they will be made upon the accompanying form, a supply of which has been sent you under separate cover for distribution.

"H. C. Corbin,
"Adjutant-General."

To the question "So far as your observation has gone, have desertions increased or lessened since its introduction?" 345 commissioned officers and 394 non-commissioned officers (739) have replied that desertions have decreased; 4 commissioned officers and 2 non-commissioned officers (6) that they have increased; 31 commissioned officers and 18 non-commissioned officers (49) that its effect on desertions is doubtful; 79 commissioned officers and 37 non-commissioned officers (116) that it has had no effect and 123 commissioned officers and 32 non-commissioned officers (155) that they are unable to state.

To the question "Has drunkenness increased or lessened since the introduction of the Canteen feature of the exchange system?" 480 commissioned officers and 429 non-commissioned officers (909) have replied that it has decreased; 9 commissioned officers and 11 non-commissioned officers (20) that it has increased; 16 commissioned officers and 17 non-commissioned officers (33) that there is no difference and 77 commissioned officers and 26 non-commissioned officers (103) that they do not know.

To the question "In your opinion does the opportunity to procure beer at the Post or in camp have any effect upon the efforts of enlisted men to procure intoxicants outside?" 551 comsioned officers and 18 non-commissioned officers cers (980) have replied that it lessens such efforts; 6 commissioned officers and 5 non-commissioned officers (11) that it increases; 18 commissioned officers and 43 non-commissioned officers (61) that it does not have any effect and 7 commissioned officers and 6 non-commissioned officers (13) that they do not know.

To the question "What in your opinion would be the effect of an absolute prohibition of the sale of beer in the Army?" and to the question "Are you in favor of such prohibition or are you in favor of the Exchange as conducted at present and with a view to its continual improvement along the same lines?" 517 commissioned officers and 464 non-commissioned officers (981) have replied in favor of the Canteen; 17 commissioned officers and 19 non-commissioned officers (36) in favor of absolute prohibition and 3 commissioned officers doubtful. These latter questions contain the gist of the inquiry.

On February 20, 1900, Mr. Bowersock, of Kansas, introduced the following bill which was placed in the hands of the Commitee on Military Affairs for a report:

A Bill

To prevent the selling of, or dealing in, beer, wine or any intoxicating drinks in any Post Exchange or Canteen or transport or upon any premises used for military purposes by the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that the sale of or dealing in beer, wine, or any intoxicating drinks as a beverage by any person in any post exchange, or canteen, or transport, or upon any premises used for military purposes by the United States, is hereby prohibited.

Sec. 2. That the penalty of any violation of this Act shall be not less than one hundred dollars and not more than five hundred dollars for each offense.

The committee submitted the following report:

"The Committee on Military Affairs to whom was referred House Bill No. 8752 report the same back to the House with the recommendation that it do pass with the following amendments:

"Amend lines 5 and 6 by striking out the words 'for military purposes' and insert in lieu thereof the words 'or owned.'

"Amend the title by striking out the words 'for military purposes' and inserting the words 'or controlled.'

"The bill was referred to the War Department and a very *voluminous report* was returned to the Committee *against the passage of the bill,* but the Committee believes that in view of the *legislation of the last Congress* when it was intended to abolish the Canteen, but, on account of faulty language did not accomplish it, the *present bill should pass.* The expressions received from all parts of the United States go to the point that *even if the Canteen results in the decreased consumption of liquor by the Army, the United States Government should not in any sense be connected with the liquor traffic,* but let private parties conduct it under the laws of the different States.

"The Committee further believes that, if the Government should not permit the *selling of liquor in military reservations,* that it *should prohibit it in any other premises* owned or controlled by the Government of the United States and with the amendments suggested in the report that the bill do pass."

At a casual glance from those unfamiliar with the subject the report appears very consistent, but upon close scrutiny by any one acquainted with the facts it presents a series of inconsistencies. In order to comprehend more clearly these inconsistencies I would call attention to the words which are in italics.

From the first sentence we are led to believe that the Fifty-sixth Congress was endeavoring to blindly follow the lead of the Fifty-fifth Congress, and, despite the greater facilities for judging and in the face of a "very voluminous report against the passage of the bill," the Committee recommended its adoption.

We judge from the second statement that though drunkenness, alcoholism, desertions, and indirectly certain diseases are lessened, yet the Government should do nothing toward relieving this distressing state of affair. The Government is in no sense in the "liquor traffic," nor does it do more than inspect and control the Canteen in *practically* the same way as revenue officers regulate the sale of liquor throughout the United States.

The *soldiers* who have the rights of citizens *incur the expense* and they reap the benefit morally, physically, and financially. It seems hardly consistent, as the third paragraph states, to hold that the same rule governing military reservations should govern soldiers. They have certain rights of private citizens and *by virtue* of their *own volition* are serving as *protectors* of the *Government* instead, as are the Indians on some of our reservations, awaiting a favorable opportunity to give trouble to Uncle Sam.

It is a curious, but no less significant fact, that in all the discussion and in the report of the hearings before Congress, both in the House and Senate, there is given the direct testimony of only a single medical officer (Dr. Munson) and only one or two others are quoted. It seems a piece of great negligence to thus ignore the evidence of men who by the very nature of their profession are in a position to elucidate the subject and whose testimony should have greatest weight in passing on this momentous question.

The Association of Military Surgeons at their tenth annual meeting (St. Paul, May 30-June 1, 1901) after hearing and discussing Major Seaman's masterly article, entitled "Observations in China and the Tropics on the Army Ration and the Post Exchange or Canteen," unanimously passed the following resolution:

"*Whereas,* The Association of Military Surgeons of the United States now in session at St. Paul recognizes that the abolition of the Army Post Exchange or Canteen has resulted, and must inevitably result, in an increase of intemperance, insubordination, discontent, desertion and disease in the army, therefore be it

"*Resolved,* That this body deplores the action of Congress in abolishing the said Post Exchange or Canteen and in the interest of sanitation, morality, and discipline recommends its reestablishment at the earliest possible date."

I wish that every one who has not read Major Seaman's article and the discussion following would do so and thereby receive great enlightenment on so important a question.

I quote from some of the gentlemen who discussed this paper in order that we might reach a more thorough understanding of the matter. Colonel W. W. Grant of Colorada: "I hope everybody will discuss this paper. Congressmen do not expect to receive as much support from medical men as they do from others. If medical men would agitate this matter, if they were determined

and united in their demands on their Congressmen, they could accomplish for themselves, the welfare of the country and the sanitary conditions of the Army much more than they have yet accomplished. I do not think it worth while to say that women should not take an interest in this matter. They have the welfare of the Army and the best citizenship at heart. I think the underlying principles of the W. C. T. U. are based on the very best motives.

"I do believe if that organization is approached properly, and there is no organization in the country that public men and women respect more, they can be convinced that a mistake has been made; and that by united action we can show public men and public officials that we have influence."

Colonel R. H. Reed, of Wyoming: "It is unfortunate that we have a class of people in this country who are theorists. The class represented by the W. C. T. U. are doing a good work in their sphere, but they have no business to meddle with things that do not belong to them; they have gotten out of their sphere and have meddled in the laws of the United States in doing so."

Brigadier-General F. W. Byers, of Wisconsin: "The good women meant to do some good, but they went after it in the wrong way, and I think however much a Congressman may want to do his duty he usually counts the votes behind every measure that comes up. I do not like politics in the Army, I do not like politics in anything military, but there is politics in this, and we have got to give the authorities at Washington to understand that we have votes behind us as well as the W. C. T. U."

Lieutenant-Colonel J. D. Griffith, of Missouri: "If this Association can only convince Congress that it has taken a wrong step in that direction, it means everything to our Army—not only to the regular Army but to the volunteer, and let me say right here that the volunteer in the United States to-day is the bulwark of the Government. When this thing comes to a test the Canteen will come again. It is our duty to bring it forward and we must have it. It is a necessity; it may be a necessary evil, but we have them all over the land. We must have the Canteen."

Major T. C. Clark, of Minnesota: "Now I would be the last person in the world to question the motive of the women of the W. C. T. U. We all know that the instinct of women is always on the side of right. We may question her logic; we may accuse her of jumping at conclusions; we may question her wisdom as a legislator, but we must always give her credit for having a high motive and a pure instinct in combating that which she thinks is wrong. Consequently any action we may take here should be dignified, and we should try to make it as effective in that way as possible and I think the action of this association as embodied in this resolution, forwarded to members of Congress and spread broadcast throughout the country cannot fail to have its effect. The opinion of a body of medical men directly interested in this question should appeal to every thinking person, and if there are any members who hold views contrary to this resolution I hope they will speak them, because to my mind the sentiment of this Association should be unanimous and it ought to go a long way."

Major Geo. Halley, of Missouri: "I think the greatest mistake made has been the advocacy of total abstinence by legislation; that stand has been a mistaken one, and it is a mistake, not with reference to the temperance question alone, but with reference to a very large amount of effort that is made to place on the statute books laws to make morals. They may be right enough, I have no reason to doubt the wisdom of some of them, but on this particular question, dealing with temperance, it is unwise, it is fatal; it is absolutely impossible to stop men drinking. They have got into that habit and the best that can be done is to try to regulate it."

Major Allen A. Wesley, of Illinois: "I desire to state that the opinion of the medical officers of the United States Army is unanimous on this question, that is, if the press reports of Chicago are correct. The press is the educator of the people, and if the press does right and says that this Association demands the repeal of this law, Congress will take notice of it. I think, as has been stated, that we can also enlist on our side the W. C. T. U., and we can do that through the press and individually."

Lieutenant-Colonel Jno. Van R. Hoff, of the United States Army: "There is no question that the Post Exchange has its value. Its value is apparent to us; we know what it means; we know how good it is for our soldiers; we know how they promise temperance—and I distinguish between temperance and teetotalism. We all know that the soldier is just the same as the citizen, except that he wears a uniform. He has the same tastes, the same inclination, the same pulse under the blue as he has in the performance of his daily vocations as a citizen."

Brigadier-General George Cook, of New Hampshire: "I am in favor of the resolution as submitted by Maj. Seaman and I am also in favor of sending it to every Congressman and to every association of the W. C. T. U., whom I believe we should deal with kindly and generously and not call anything they have done by a harder term than to say they were misguided; then we can accomplish something."

It would be undignified and dishonorable to accuse the men above quoted as having any but the best motives at heart and no one can truthfully say that they are influenced by any ulterior designs. These men are medical officers with large experience and whose positions are such as to relieve them from the attack of personalities.

When the American Medical Association met in St. Paul (1901) the resolutions passed by the Association of Military Surgeons were presented before that body and referred to the Committee on National Legislation, whose report as here given was adopted on motion of Dr. Lewis of Chicago.

"Your Committee on National Legislation, to whom was referred the following resolutions from the National Association of Military Surgeons, presented to your honorable body by Major Louis L. Seaman, U. S. V.:

"*Resolved,* That this body deplores the action of Congress in abolishing the Army Post Exchange or Canteen, and, in the interest of discipline, morality, and sanitation, recommends its re-establishment at the earliest possible date.

"We have carefully considered the resolution proposed and declare it to be wise, proper, and of importance to every citizen of this republic.

"The resolution is the outgrowth of careful study and observation by the medical department of the United States Army, it is concurred in by the commanding officers at the several posts, and is intended to correct serious abuses under the present law which result in drunkenness, desertion, insubordination, dishonorable discharge, crime, poverty, appalling increase in venereal disease, and invalidism among the soldiers of the United States Army.

"We find that the experience of foreign governments coincides with that of the National Association of Military Surgeons in the necessity for the Army Post Exchange or Canteen.

"We recommend that the American Medical Association adopt the resolution proposed and that you petition the Congress of the United States to repeal, at the earliest moment, the objectionable law which prohibits the Army Post Exchange.

"Respectfully submitted,
"H. L. E. Johnson,
"Chairman Committee on National Legislation."

The American Medical Association has been accused of passing the resolution in an unparliamentary manner, the accusation being that the "ayes were called for, but not the noes."

In order to find out the truth of the statement I wrote to Dr. John A. Wyeth, President of the Association, and received the following letter:

"New York, September 16, 1901.

"Dear Doctor: I have your letter of September 13th. I have not seen the controversy in the MEDICAL NEWS. I was present at the meeting when the question of the Canteen was voted upon at St. Paul. It is my recollection that a very decided majority of the members present voted in favor of the result, and that when it was declared carried by the President it was fairly carried. Under the circumstances (I have to preside at the next meeting when the question is to be brought up), I scarcely think it would be appropriate for me to express an opinion, but will leave the matter in abeyance until I see you at the Saratoga meeting next June. I sincerely hope you may come, and that what I have written may be satisfactory to you for the purpose you have in view.

"Sincerely yours,
"John A. Wyeth."

I wrote the Surgeon-General as to his views of the Canteen and he kindly answered in the following manner:

"Washington, Oct. 12, 1901.

"Dear Sir: In reply to your communication of September 12th, I am directed by the Surgeon-General to send you the enclosed extract from his annual report for the year ended June 30, 1901, shortly to be published.

"The Surgeon-General has watched the progress in the decline of the prevalence of alcoholism with much satisfaction, and reported on it in each of his reports. I send you a copy of the report for 1896 in which on pages 84-88 and in Tables XII. and XVI. you will see the manner in which this record has been kept.

"Very respectfully,
"C. Smart,
"Assistant Surgeon-General, U. S. Army."

[Extract.]

"The steady decrease of late years in the admissions for alcoholism among the men of the regular army is a matter for congratulation. Military officers may be said to be unanimous in their opinion that this was mainly the result of the establishment of the Post Exchange or Canteen at military posts. The following shows this gradual improvement. Mean annual admission rate of the decade ending with 1889, 56.68 per thousand of strength. Admission rate for 1889, 41.44; for 1890, 40.73; for 1891, 40.01; for 1892, 37.23; for 1893, 33.97; for 1894, 30.94; for 1895, 30.11; for 1896, 29.06 and for 1897, 27.86. In 1898 the altered conditions consequent on the Spanish-American war prevented further comparisons. There is less drunkenness among troops in active service than in a command doing garrison duty in a time of peace."

Major James Evelyn Pilcher, Brigade Surgeon, U. S. V., Capt. (Retired), U. S. A., at my request to furnish me with a copy of the *Journal of Military Surgeons* and to give me his views on the Canteen sent me the following letter:

"Carlisle, Penn., October 23, 1901.

"Dear Doctor: I will have pleasure in sending you a copy of the next number of the *Journal,* containing Major Seaman's article and the discussion upon it.

"So far as my personal opinions on the subject are concerned, I have no objection to your using my name if you desire, but I fancy it would hardly be worth while, as my opinion is simply that of the vast majority of medical officers who have had much experience with troops, viz., that while by no means free from evil qualities, the benefit to the men and the service enormously surpasses the disadvantages of the Canteen.

"Trusting that your article will be powerfully effective in propagating a correct view of the subject, I remain,

"Very sincerely yours,
"James Evelyn Pilcher."

Lieutenant-General Miles, in his latest report to the Secretary of War, in speaking of the prohibition of the sale of intoxicating beverages in the Canteen, says, "It is believed that no injury has resulted thereby and that the law has in the main been beneficial."

Such a statement from the Commanding General of the Army must have some weight, but consideration must also be given to the opinions of the Inspectors-General in their report which accompanies that of General Miles.

Colonel Burton (Cuba) says, "The officers generally complain that the elimination of beer from the Exchange has worked a hardship on the soldiers and has been detrimental to good order and military discipline."

Lieutenant-Colonel Reade (Dakota) says, "It is the consensus of opinion that the Exchange, with the Canteen feature, promotes the morals, temperance, discipline, and health of the men. Further, that in the interest of effective services and morality the Canteen should be reëstablished as a section of the post Exchange. It is better for men to drink beer on a military reservation, where they can be cared for, than to drink alcoholic liquor off of it. The recommendation previously made by me is renewed—that, whenever practicable, post or regimental chaplains be placed in charge of the Post Exchange."

Major Sharpe (Colorado) says, "Observation made during the past year, both in the Tropics and at the various posts in this Department, strongly confirms the opinion expressed by me in former reports that the legislature of last winter abolishing the canteen was ill advised. If there is no authorized and decently kept place of resort within a garrison where the soldier can find recreation suited to his tastes and station in life, he will seek it outside, and the innumerable brothels and whisky dens which are springing up on the edge of the reservations will prove the most baleful and destructive enemy to contentment and good order with which a garrison can be cursed."

Major George M. Dunn, Judge-Advocate, Department of Cuba, in discussing the abolition of the Canteen, says, "During November, December, and January, 1900, with the Canteen, there were 139 convictions for drunkenness, and during the months of March, April, and May, 1901, the Canteen having been abolished, there were 275 convictions for drunkenness, or nearly twice as many, due to the abolition of the Canteen."

I have given these reports, letters, resolutions, and discussions in order that a correct and impartial verdict may be reached and I have endeavored to be as moderate as possible.

After patient effort covering a few months I have accumulated a mass of evidence in favor of the Canteen which, were it all published, would constitute a volume of itself, but I have tried to give that which practically expresses the sentiments of all.

I have talked with men and women of integrity and knowledge in my native town, workers in the Y. M. C. A., Sabbath school teachers, and have by every available means sought to get the expressions of the most conservative.

While we can readily appreciate that others may sincerely differ in their opinion from us yet the fact remains that the medical and military officers of the Army are without doubt in a position to judge most clearly of the benefits and evils of the Canteen.

I have been surprised in this connection at the ignorance of several intelligent persons of my acquaintance regarding the name "Canteen," they having been, heretofore, under the impression that the canteen was a liquor flask issued by the Government and worn by the soldier in camp and out of it. I am free to confess that for some time I was under the same false impression. These remarks are made only that we may in some slight manner appreciate the ignorance of the general public on such questions and how blindly it follows the leader without "rhyme or reason."

In closing I wish to thank the many Senators, Congressmen, and Government officials, and many others, who have rendered me great assistance in a most prompt, courteous and obliging manner.

THE ROENTGEN METHOD IN THE DIAGNOSIS OF RENAL AND URETERAL CALCULI.[1]

BY CHARLES LESTER LEONARD, A.M., M.D.,
OF PHILADELPHIA.

THROUGH the adaptation of the discoveries of pure science, the art of medicine and surgery is becoming an applied science. The discovery that has probably exerted the greatest influence is that of the lens and its adaptation in the microscope. Roentgen's discovery is almost as fundamental. We cannot see into the future or estimate whether its influence will be as widespread. It already forms the basis for a new and valuable method of diagnosis and has also given rise to a new therapeusis. Whether the Roentgen rays are the therapeutic agent, or, as it will probably be proved, only another method of employing electricity, the discovery by Roentgen is responsible for its introduction.

The application of this method of diagnosis is gradually extending, as the technic essential to its employment in various fields of diagnosis is developed. In many cases it has become the most accurate method of diagnosis, and its accuracy has often shown the errors and defects of older methods. It cannot, however, be insisted upon too frequently that it is essentially a method of diagnosis, and that, as such, it should be used by professional men only. The diagnostician must possess professional knowledge, special technic and clinical experience with this method.

The advance made in the diagnosis of calculous conditions of the kidneys and ureters by the employment of this method illustrates its pos-

[1] Read before the Society of Alumni of Bellevue Hospital, Nov. 8, 1901.

sibilities in other fields, and the effect which it has had upon the methods of operating and treatment in these cases demonstrates its value.

In suspected renal lithiasis, when the typical symptoms are wanting or confused, a differentiation from diseases of neighboring organs is often impossible by the older methods. On the other hand, a calculus may be present and yet the absence of certain symptoms may produce a symptom-complex that points to disease of a neighboring organ. Thus, in one case in which the diagnosis lay between ureteral calculus, chronic ovarian disease and appendicitis, the Roentgen examination excluded calculus and the operation freed a chronically inflamed ovary bound down by dense adhesions. In another case that had baffled a number of clinicians by the indefiniteness of the other symptoms and the persistent character of the pain, the skiagraph showed six phleboliths which the operation proved were in a varicocele of the broad ligament. On the other hand, in a case that had been diagnosed "nervous dyspepsia," the colic and gastric crises were found to have been caused by a calculus impacted in the ureter; its position also explained the absence of pathological elements in the urine at the time of the attacks, as it produced a unilateral anuria.

The differentiation between renal lithiasis and other forms of nephritic disease is often even more difficult. A small calculus in the kidney may give rise to symptoms identical with those of incipient, malignant or tuberculous disease. The unrecognized presence of a small calculus in the calyces or pelvis of the kidney or in the ureter is, however, a menace to its integrity and functional activity. These small calculi often block the ureter and cause anuria and the destruction of the kidney. The Roentgen method of diagnosis has shown that these calculi in their passage through the ureter give rise to "renal colic" more frequently than do calculi in the calyces or pelvis of the kidney. More than sixty per cent. of the calculi detected by the author have been found in some portion of the ureter.

The recognition of this larger portion of ureteral calculi points, however, to the facility with which they can pass through the urinary tract without, in the majority of cases, producing severe symptoms. Undoubtedly many more are passed than are brought to the attention of the surgeon. In the inability to recognize and locate the seat of obstruction lies the gravest source of danger. Now, that these calculi can be found and their size and position determined, the gravity of the situation is decreased; conservative surgery[1] can rationally wait for Nature to expel them, or, if necessary, immediate operation can be directed to the exact seat of the lesion.

The value of this method is easily realized in cases of complete obstructive anuria. The recognition of the calculus as the obstruction directs operation to it and prevents operation upon the wrong kidney. In unilateral anuria, when an unrecognized calculus completely obstructs the ureter, all urgent symptoms subside and the patient believes that the trouble is over. Unless a calculus is passed and recognized, the subsidence of symptoms should be construed as an indication of grave danger. The integrity and functional life of the kidney are threatened. If the patient has not been examined by the Roentgen method, it should be done immediately. If a calculus is found and a cystoscopic examination shows the absence of urinary flow from the affected side, immediate operation is indicated. If, however, urine is passing, and the skiagraph shows the calculus to be of a size that can be expelled, the operation can be postponed. Post-mortem examinations have shown how frequently the destruction of a kidney takes place after calculous anuria has terminated its functional activity.

Temporary unilateral anuria can be produced by calculus impaction, twists of the ureter, valvular formations and shifting or movable kidneys. The similarity in symptomatology is often such that the passage of the ureteral calculus cannot be differentiated from the other conditions, except by the Roentgen method.

These lesions have been frequently found in operations upon cases suspected of having calculi in which a negative diagnosis as to calculus had been rendered after the skiagraphic examination.

Calculi in the ureter just outside the bladder may give rise to symptoms that simulate vesical stone, the irritation of the vesical trigone causing, among other symptoms, a referred pain in the glans penis. In a case which illustrated this very clearly the patient had been operated upon and searched for an encysted vesical calculus. The Roentgen examination showed four small calculi impacted in the lower portion of the ureter. Two of them were afterward passed and the others broke down and were removed from the bladder in the form of coarse gravel.

The symptoms are frequently so indefinite, even when a large calculus is present in the calyces or pelvis of the kidney, as to render an absolute diagnosis impossible except by exploratory operation or the Roentgen method. In one case the presence of a calculus in a large pyonephritic kidney was suspected; the skiagraph showed no calculus and an operation confirmed that diagnosis. In another case a branched calculus, one and one-half inches in length, was found in a patient whose only symptoms had been a slight albuminuria and a continued dull ache in the lumbar region. This patient had consulted a number of clinicians, only one of whom had advised exploratory operation. In a similar case, which had, however, a history of having passed blood ten years previously, a small calculus weighing thirteen grains was found and removed. The urine was normal except for a trace of albumin and an occasional pus-cell.

As an effect of the more accurate knowledge

[1] Amer. Medicine and Jour. Amer. Med. Assoc., Nov. 30, 1901.

obtained by this method of diagnosis, an alteration has taken place in the indications and methods of operation. The determination of the exact location, the size, and number of the calculi present, renders rational a conservative expectant line of treatment which, without this accurate knowledge, would have been extremely hazardous. With this knowledge, in cases in which the calculus is found to be of a size that will probably pass, if there is no anuria present, delay under careful supervision is more rational and less dangerous than operation. The Roentgen method is the only means of differentiating between those cases that demand immediate operation and those in which medical or expectant treatment is justifiable. The value of this differentiation has been proved in nine cases in which delay has been advised as a result of the Roentgen examination, and the calculus has subsequently been passed.

The accurate determination of the position and number of the calculi has resulted in limiting the field of operation, and in rendering the intervention more accurate and complete, while it excludes the danger that menaced from the unrecognized involvement of the other kidney or ureter in the calculous disease. It is no longer necessary to perform an exploratory nephrotomy upon the healthy kidney before doing a nephrectomy, or to open a healthy kidney in the search for a calculus that is obstructing the ureter lower down. Incision into the kidney, during an exploratory or any other operation, is only justified by the detection of a calculus by the Roentgen method or an obvious pathological lesion.

A calculus in the ureter can be removed by a direct ureterolithotomy, and the pyo- or hydronephrosis can be cured without direct operation upon the kidney. The failure to detect a calculus in the ureter during a nephrolithotomy has frequently led to the formation of a urinary fistula. Two cases of this character have recently been referred to the author for examination. In both calculi were found the ureter. The presence of multiple calculi in ten cases that have been referred to him for diagnosis renders this procedure an essential to a complete examination. In four of these cases calculi were found in both kidneys after one calculus had been removed at a previous operation.

The accuracy of the negative diagnosis renders it unnecessary to incise the kidneys or ureter in the search for calculi. It renders safe and rational the treatment of renal disease by purely medical measures, when the symptomatology does not point to some cause other than calculus that demands operative intervention. An operation, with its attendant risks, that would otherwise have been essential to the safety of the patient and the integrity of the kidney, is often obviated. It eliminates calculus anuria from consideration, and any operation upon one kidney is free from the danger that the other is the seat of calculous disease. In cases demanding a nephrorrhaphy there is no longer need to search for calculi. The kidney does not need to be opened in the search for a calculus that is in the ureter, or for others when those demonstrated have been removed.

These effects upon diagnosis and treatment, as the result of the employment of the Roentgen method of diagnosis, have been observed in the study of the 206 cases suspected of renal calculus that have been referred to the author for examination. Calculi have been found in 65 cases and in over 60 per cent. they were in the ureter. In only three cases in which a negative diagnosis has been rendered has it been found incorrect. In one case, already reported, the error was due to faulty technic. In the other two cases calculi, weighing less than one grain each, were overlooked and subsequently passed. Other calculi as small have frequently been detected.

The chance of error in the negative diagnosis is, therefore, very slight, and the calculi that may be overlooked are so small that their final expulsion is certain. There are as yet patients in whom it is impossible to make an absolute negative diagnosis on account of their size. In suitable cases hydronephrotic and displaced kidneys have been demonstrated; while calculi have been detected in patients weighing over 200 pounds. In such cases when great detail is demanded in the skiagraph or the difficulties to be overcome are out of the ordinary, it is sometimes necessary to make repeated exposures before a satisfactory result is obtained. When, however, such a result is obtained, it enables the diagnostician to demonstrate the accuracy of his results to those capable of appreciation.

1930 Chestnut Street.

RETINAL LESIONS OF CHRONIC INTERSTITIAL NEPHRITIS.[1]

BY EDWARD JACKSON, A.M., M.D.,
OF DENVER, COLO.

THE extremely intimate connection between chronic Bright's disease and certain general degenerative changes in the walls of the blood-vessels is universally recognized. But the true relation between these local renal changes and the general vascular alteration is so imperfectly understood that it is still entirely uncertain which stands in the chain of connection nearer to cause and which nearer to effect, or if both may not arise on parallel lines from common causes as yet unappreciated. The local changes have, by postmortem study and by clinical observation of the urine, been fairly well worked out. But the general vascular degeneration, although its effects on blood-pressure have claimed attention and have been the basis of much fine theorizing, is still extremely obscure. Enough observations have been made upon them to demonstrate that the blood-vessels directly visible within the eye participate fully in the general vascular

[1] Read before the Rocky Mountain Interstate Medical Association, Sept. 3, 1901.

changes. These changes have been thus observed accidentally or incidentally from time to time; but no sufficiently thorough study of them has been made to give any definite idea of the full possibilities of investigation along this line.

Of the general value of the ophthalmoscope, Loring truly said, "With it, it is like walking into Nature's laboratory and 'seeing the infinite in action,' since by its means we are enabled to look upon the only nerve in the whole body which can ever lie open to our inspection under physiological conditions, and to follow in a transparent membrane an isolated circulation from its entrance into the eye through the arteries to its exit in the veins." It is to be regretted that so few physicians especially interested in renal and vascular disease have entered Nature's laboratory through the open door of the ophthalmoscope. Ignorance of the facts of the case seems the most reasonable explanation for the common failure to understand the absolute and relative importance of the retinal lesions of chronic interstitial nephritis.

These lesions include: (1) Alterations in the contour, size, and color of the retinal vessels; (2) hemorrhages and the progressively changing exudates which constitute steps in the removal of effused blood; (3) retinal edema; (4) degenerative changes in the neural elements of the retina and alterations in the layer of pigment epithelium; (5) deposits of exudate which perhaps have a significance somewhat different from that of the foregoing symptoms.

Vascular Changes.—Changes in the capillary circulation and in the smallest arteries and veins cause little or no perceptible change in the appearance of the general fundus. But they do cause striking alterations in the color of the optic disk. To such changes must be ascribed one of the earliest, and perhaps the most constant, ophthalmoscopic symptom of this disease. This is a dirty or brick-red discoloration of the optic disk, which may be compared to the color of a concentrated urine, turbid with urates and uric acid, as seen against a white background. This symptom belongs to the stage of high arterial tension, and may antedate any noticeable alteration in the urine. It probably persists over long periods, with considerable alterations of hue from time to time. This appearance is not well described in the accounts commonly given of these ocular lesions. But I have carefully observed it a number of times, and mention it in this connection with no question as to its significance.

Irregularities of Caliber.—Although not so striking in the arteries as in the veins, these are sometimes unmistakable in the former. Their pathological character is often difficult to establish in any particular case. An artery to start with is not a rigid, machine-drawn tube. More like a running stream, its width varies from point to point, though normally within rather narrow limits. More important are the variations in the shape of its cross-section. An artery at one point may be flattened in the plane of the retina, at another point it may be flattened in a plane at right angles thereto. When seen with the ophthalmoscope, this gives it a narrower contour at one point than at another, although it might have the same sectional area at both points. Still more confusing are the changes in apparent width occasioned by variations in the vascular sheaths, or in other tissues surrounding the artery, the reflexes from the retinal surface, or the crossings of other vessels.

But in spite of these variations, which are constantly to be encountered in the normal eye, we can sometimes make out in the arteries alterations of outline that may be set down with certainty as abnormal. Distinctly sacculated aneurismal dilatations occur, but they are rare. I remember to have seen them, on vessels large enough to be certainly identified as arteries, in but two cases. Notable constrictions and considerable lengths of broadened vessels are more frequent.

Alterations in the contour of veins are much more common. They can be made out in practically all cases of albuminuric retinitis. Generally the most striking alterations are seen in the small veins that arise in the region of the macula. The veins present the same normal variations of contour as the arteries. But the pathological alterations are so much greater as to be readily recognizable. These alterations are chiefly in the direction of dilatation. Sacculated dilatations are much more common on the veins than on the arteries. When relatively large, they may be difficult to distinguish from hemorrhages, especially when other parts of the vein are hidden by a swollen hazy retina.

Changes of Size in the Vessels.—These really include the foregoing changes of contour. It is less common and less characteristic for the retinal arteries or veins to be dilated or contracted as a whole than for them to show the partial changes of size above referred to. Such general dilatation or contraction of the vessels occurs in connection with optic neuritis, the arteries being contracted and the veins dilated as in choked disk from other causes. Usually, in chronic cases, there is a general shrinkage of both arteries and veins, although some parts generally remain dilated.

Tortuosity of the retinal vessels is chiefly a sign of dilatation. A distended blood-vessel enlarges in all directions. It not only becomes broader, it becomes longer; and its increased length forces it to leave the comparatively straight course for one curving back and forth. Marked tortuosity of the retinal vessels occurs as an anomaly. As an anomaly, it is more likely to affect all of the retinal arteries or all of the retinal veins; still it may be most marked in, or wholly limited to, a single vessel. Tortuosity, as an anomaly, is more likely to be confined to the plane of the retina, the different curves of a vessel lying at the same depth, having the same refraction. Pathological tortuosity shows

greater variations of depth of the different parts of the vessels. The curves are toward and from the center of the eyeball, as well as in the plane of the retina. But the most certain guide to the character of the tortuosity is the co-existence of other retinal lesions, particularly the irregular venous dilatations.

The alterations in the color of the vessels may be due wholly to the character or to the amount of their contents. The dilated veins look dark. Extreme anemia causes all the vessels to appear pale. But changes in the vessel-walls may also produce changes of color. The most striking of these are those due to opacity of the walls concealing the contained blood-current. The vessels are often yellowish from such opacity. In a good many cases the gray or whitish line along each side of the vessel which is often seen in normal eyes upon the disk may be found extending far out into the retina or it may attend some limited part of a vessel quite removed from the optic disk. A more rare, but more striking condition, is that in which the vessel becomes an opaque brilliant white, through fatty degeneration. In one case that I saw with Dr. George C. Harlan of Philadelphia, who reported it to the American Ophthalmological Society[1], every retinal vessel in one eye, except one minute branch, presented the appearance of a brilliant white streak or band. Usually, however, such an appearance is confined to a single vessel or to limited patches in one or more vessels. Such patches may be found, without any evidence that the passage of blood through that part of the vessel is interfered with.

Retinal Hemorrhage is pretty constantly present among these retinal changes of chronic interstitial nephritis. But in most cases there are times when no hemorrhage will be found upon ophthalmoscopic examination. Mostly the hemorrhage spreads sufficiently in the nerve-fiber layer of the retina to give it the usual flame-shape. But smaller rounded dots of effused blood are frequent; and when they occur without much edema and without opacity of the retina they are readily overlooked. Very large hemorrhages are rare in the condition specially under consideration. They are more apt to attend the toxic exudative form of disease. How long any particular retinal hemorrhage will be recognizable as a hemorrhage is always uncertain. Small hemorrhages may remain apparently unchanged for several weeks. In other cases large ones wholly disappear in a few days. Rapid and complete disappearance is probably a favorable sign.

The symptoms thus far discussed—the changes in the appearances of the vessels and hemorrhages—are clearly dependent upon alterations of the vessel-walls. They are the retinal expression of the general vascular degeneration which seems to be an essential part of this disease. The edema and degenerative changes in the retina proper are so constantly associated with the above changes that it is reasonable to suppose they have the same origin.

Edema of the Retina is usually localized, at least it is much more marked in some parts of the retina than in others. In the affected patches, the color is lighter and more gray than that of the normal fundus. Sometimes it is wholly gray, with no trace of the normal fundus red. In these patches the retinal vessels are more or less hidden, except the parts that come fully up to the surface of the retina, which become more noticeable by reason of the strong contrast of their gray background. A small knuckle of dilated vein appearing thus upon the surface, while the remainder of the vessel is hidden by opacity of the swollen retina, may look exactly like a small hemorrhage. Apparent small hemorrhages in the midst of the retinal edema must, on this account, be carefully examined before they are passed upon. Close inspection may show the affected vessel entering the opaque patch.

Degenerative Changes in the Retina.—The brilliant white patches due to fatty degeneration in the retina are the most striking ophthalmoscopic symptom of chronic interstitial nephritis. They probably always appear in a case that runs a complete course. Such a patch may follow and arise from a retinal hemorrhage; it may be a late stage in the history of a mass of exudate; or it may follow a localized edema. But smaller patches, and even those of medium size, may arise without any evident preceding lesion. So that they seem to have a direct relation with the underlying vascular change or its essential cause. Such spots are not peculiar to albuminuric retinitis. They are found in connection with optic neuritis from brain tumor; are a leading feature of diabetic retinitis; constitute the characteristic wreath of retinitis circinata, and sometimes appear in retinal thrombosis and in leucemic retinitis. Yet the first thought on finding such patches should be of the renal-vascular disease. Their arrangement in radiating lines about the macula, certain bundles of nerve-fibers being affected at different points, while others remain intact throughout, is the typical arrangement. But this grouping may be quite wanting without throwing any doubt on the diagnosis. A few times I have found these spots chiefly in the periphery of the retina. When this was the case the spots were all small. Large patches appear only near the disk or macula.

These white spots, it would naturally be inferred, are of comparatively late and slow development and somewhat permanent in character. But some are almost always found at the first examination of the case; and last year W. A. Martin[1] reported a case seen when vision was first impaired, in which exudates began to appear in ten days, and in the course of three weeks a perfect halo characteristic of albuminuric retinitis had developed at the macula. Nor are such patches entirely permanent. They may often be

[1] Transactions for 1896, page 199.

[1] Ophthalmic Record, July, 1900.

seen to diminish, their outlines becoming more indefinite; and in cases that persist for a long time, they may wholly pass away.

The degenerative changes in the pigment epithelium are mostly secondary to hemorrhage, or to a distinct inflammatory process in the overlying layer of the retina. They include sharply localized atrophies and masses of pigmentation. That more generalized changes in this layer occur is not unlikely, but they have not been carefully studied.

Masses of Exudate.—The large masses of exudate found near the optic nerve entrance and posterior pole of the eye, in some cases, are on the one hand related to hemorrhage, on the other to edema, and they may become the origin of the white spots. They are however seen especially in albuminuric retinitis due to acute nephritis and to pregnancy. In chronic interstitial nephritis I have met them chiefly in cases in which toxemia was strongly marked. This might be coincidence, but it suggests an origin from something besides vascular degeneration. The exudate causes swelling of the retina to several times its normal thickness, and disfigures the fundus with dirty reddish-white blotches, which may obliterate the usual landmarks of the eye-ground, even the optic disk. These masses may embed or hide the other changes in the retina. They are liable to great changes of form and amount and may be entirely removed.

Associations of the Retinal Lesions.—As has before been indicated, these retinal lesions are very closely associated with vascular changes. I have never seen them approaching a typical development, but in conjunction with vascular rigidity; except the hyperemia first mentioned. In the great mass of cases they appear just when the prolonged high vascular tension begins to be insufficient and elimination is failing. The association with vascular degeneration is more constant than association with albumin in the urine, casts of any form, or any other clinical evidence of renal disease. It is this association that gives these lesions their unique prognostic significance. They appear when the balance of blood-pressure and matter to be eliminated has been lost, and give most positive notice of a state of nutrition that cannot very long continue. If "a man is as old as his arteries," these evidences of arterial degeneration tell in unmistakable language that his race is nearly run.

Prognosis.—Accumulated statistics now including many hundreds of cases, brought together from all parts of the world, show that a large majority of patients presenting these lesions die within a year after they are first discovered. Belt brought together some 419 cases and found that 72 per cent. were fatal at the end of the first year, and 90 per cent. within two years. The cases reported from Haab's practice by Possauer are even more instructive. Of men applying at his clinic all were dead within two years. Of the women coming to the clinic 32 per cent. survived that period. But among private patients who could live comfortably, only 59 per cent. of the men died within two years, and of the women only 53 per cent. These figures, which are to a large extent supported by the experience of others, give a strong indication as to the proper management of these cases, and the especial dangers that threaten to terminate the life of the patient suffering from chronic interstitial nephritis.

Conclusion.—In the foregoing account special emphasis has been laid upon the close relation between these retinal lesions and the degenerative changes in the walls of the blood-vessels. Whether the vascular changes cause the retinal lesions, or whether their connection is that both spring from a common cause, the retinal symptoms take from this close connection great importance. They throw light upon what goes on in the central nervous system, and, modified *pari passu*, in other organs of the body. Whether considered as a means of understanding the essential nature of this disease process, or as throwing light on the character and course of the individual case, they have an importance that the mass of physicians very imperfectly appreciate.

EXOSTOSIS OF FEMUR DUE TO TRAUMATISM.[1]

BY W. R. TOWNSEND, A.M., M.D.,
OF NEW YORK.

A MUSCULAR young man of twenty-five years of age while playing football on February 12, 1901, collided with another player and was struck across the right thigh by the other man's knee. An immediate effusion followed into the knee-joint. The patient was seen by Dr. Kimball, who very properly applied a plaster cast and kept the knee at rest. This treatment was continued for three weeks, and at the end of that time the swelling had subsided and the knee synovitis was apparently cured; but, to make certain that the knee would not be damaged, a plaster cast was reapplied and left on for another three weeks, when the knee was found to be free from fluid, straight, and flexion restricted to about thirty degrees; above the joint was found a hard mass. The patient was then referred to me.

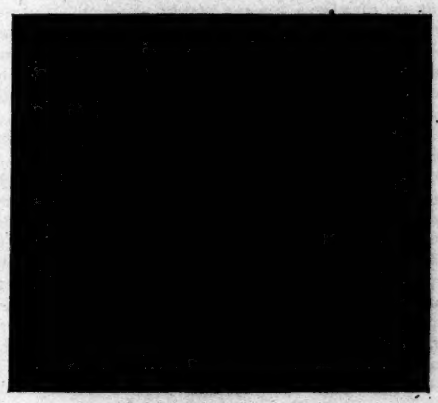
An examination showed the knee-joint free from fluid. The knee could be fully extended, but could not be flexed more than thirty degrees. No pain or tenderness about the joint. About two inches above the knee was a hard mass four inches long and apparently attached to the femur. Deep pressure gave slight pain. The right thigh measured seventeen inches four inches above the patella, the left measured eighteen inches; the right thigh, six inches above the patella, eighteen and one-half inches, the left, nineteen and one-half; the right thigh, nine inches above the patella, nineteen and one-half, the left twenty and three-quarter inches. The restriction of motion in the knee seemed to be due to the presence of

[1] Patient, radiograph and specimen presented at meeting of Clinical Society of New York Polyclinic, Nov. 4, 1901.

this mass, rather than to any condition within the joint. The quadriceps could not be fully stretched, and when an effort was made to bend the knee, the patella could not slide downward.

The diagnosis lay between an exostosis, a sarcoma or a myositis ossificans. Sarcoma, although it does occasionally develop with great rapidity, was thought to be the least likely diagnosis, as the man's condition was so perfect. There was no pain and the injury which caused this growth was received less than two months prior to my examination.

Two X-ray pictures were taken. An antero-posterior view shows absolutely nothing of the tumor. A lateral view shows little patches of darkness in the muscle, and a perfectly clear, clean edge to the femur. It does not show any connection between the femur and the bony tumor. Owing to the short time that the bone had been forming, it was not expected that the shadows would be any darker than they were. From this picture I was rather inclined to the diagnosis of myositis ossificans, but examination after removal of the tumor showed that it was an exostosis.



Exostosis of Femur.

Operation was performed April 9, 1901. An incision about four inches long was made along the anterior surface of the thigh, directly over the tumor. It was removed without any difficulty. Care was taken not to enter the synovial sac above the knee-joint, as the lower end of the tumor infringed on it. The tumor was entirely dissected out, with some of the muscle. It was found attached to the periosteum and not to the bone. The wound healed *per primam*, the man's temperature never went above 99° F., and he made a complete and rapid recovery. On May 15th he could bend his knee forty-five degrees; on May 22d, fifty degrees; on May 27th, fifty-five degrees; on June 4th, ninety degrees, and he is now able to move it through an arc of about one hundred and twenty degrees. The scar is not adherent, and he is able to resume his occupation, which is that of a professional tennis player.

The microscopical examination made by Dr. Jeffries of the Polyclinic Laboratory shows the following: The bone tissue removed from thigh of patient in the Polyclinic Hospital April 9th has been submitted to microscopical examination, and its nature determined as an exostosis. It is unassociated with the muscular tissue removed, other than by continuity. The two tissues are at all points separated by a thin layer of dense fibrous tissue of the white, inelastic variety. This fibrous capsule (?) is not a well-defined band, but gradually diminishes in density in either direction toward bone and muscle. The muscular tissue adjacent to the fibrous has to a certain extent been displaced by fibrous tissue, as muscular fibers with all degrees of atrophy are found embedded in the latter.

There is no sign of acute inflammation; the changes are all of a proliferative or formative nature. The bone tissue is of the cancellous variety, some of the trabeculæ of which contain cartilage. The marrow is a very loose fibrous tissue, richly supplied with blood-vessels of capillary and cavernous varieties. The cells are scant, and are arranged within the meshes of very delicate fibrillæ. They are generally spindle-shaped, but with an admixture of small mononucleated (lymphoid) cells. The surfaces of the trabeculæ are beset with a layer of osteoblasts and here and there a multinucleated osteoblast is observed. The measurements are 9 centimeters by 4½ centimeters by 2 centimeters.

MEDICAL PROGRESS.

PEDIATRICS.

Unnoticed Fractures in Children.—The overlooking of fractures is especially likely to happen in children, not only because they are less exact in their complaints, but because many fractures in children show disproportionately little pain or reaction. Even if the fracture be complete the child is often surprisingly tolerant. A series of 18 cases of fractures in children, in which diagnosis was confirmed by the skiagraph, is reported by F. J. COTTON and R. H. VOSE (Boston Med. & Surg. Jour., Jan. 9, 1902), who suggest certain diagnostic points. In examining these patients there may be no complaint of pain, but some difference in the use of the limb of the two sides may be noticed. In some cases this is due to reflex muscular spasm of the same sort as is seen in joint disease. Illustrations are the limp associated with certain fractures of the tibia and the loss of grasp in green-stick fracture of the forearm; again, in fracture of the clavicle, if the child be asked to raise both arms he lifts one hardly more than half as high as the other. Passive motion in these cases may or may not be painful. If painful, the pain is felt only on extreme flexion or extension. Local tenderness may be slight, but is always present. Careful palpation may reveal deformity and now and then wholly unexpected crepitus is found. When days or weeks have elapsed a well-defined (often ring-like) callus is palpated. In treating the cases upon which their report is based, the writers obtained practically perfect results by simple fixation for from two to four weeks.

Enlargement of Bronchial Glands.—Although this is undoubtedly a comparatively frequent condition in

childhood, it is probably very seldom diagnosed because physicians are too careless in making physical examinations. D. McM. OFFICER (Inter. Med. Jour. of Australasia, Dec., 1901) says that it may be recognized by the presence of dulness in the interscapular region of one side, together with diminished breathing over that side of the chest. The latter sign results from the pressure of the glands upon the bronchi and consequent narrowing of the lumen. The most frequent cause of the enlargement of these glands is tuberculosis, and in children pulmonary tuberculosis is usually secondary to the enlargement of these glands. A chronic bronchopneumonia follows and, in contrast to adult tuberculous lesions, the signs are infrequently found at the apices. The early recognition of these glands at the root of the lung, therefore, becomes of prime importance. Influenza and measles are also causes of such glandular enlargement, but the enlargement is seldom so persistent as in the tuberculous cases.

Regulation of Food in Childhood.—Although the infant presents most difficult problems to the physician in regard to the proper modification of milk in the early months, and although so much has been written about the feeding at this time, one should not forget the importance of an intelligent supervision over the subsequent change of diet from milk to a more general one. J. E. WINTERS (Med. Rec., Jan. 25, 1902) shows that there are a rapid development and a marked functional activity of the glands which secrete the diastasic ferments from the seventh to the tenth month, depending upon the degree of development of the child and the advancement of dentition. This shows the need for more farinaceous food and among the most valuable of these is oatmeal, which contains a large percentage of iron, proteids, fat and mineral matters, the constituents most essential for the development of the child. On account of the cellulose present, oatmeal should be well cooked and drained, and a half ounce of oatmeal jelly may be added to each second feeding. At the end of the first year a soft-boiled or poached egg mixed with bread crumbs from stale bread may be added to the diet. The nuclein of the yolk is especially valuable on account of the iron and phosphorus. Only a small quantity twice a week should be given at first. A hard crust which will necessitate vigorous chewing is useful at this time. At the end of fifteen months a child should get whole milk, oatmeal or barley, soft-boiled eggs twice a week, crusts of bread twice a day and perhaps a little bread and milk. Cereals should be given without sugar, as the latter causes constipation by the large amount of water required to keep it in solution. Orange juice and prune pulp are the first fruits for a child and are especially good in cases of constipation. They are given one hour before meals. The growing child needs large quantities of mineral matter to build up the bony framework, but this must be in the form of organic combination with proteid substances. Raw milk, eggs, cereals and certain fresh vegetables furnish mineral salts in organic combination ready for assimilation. The mistake is often made of giving too much meat and meat extractives, which stimulate metabolism and really prevent laying on fat or muscle tissue, on account of their overstimulating action. Carbohydrates are easily oxidized and their oxidation serves to protect the proteids and fats from consumption. The shielding of these requisites for the growth and development of new structures is a matter of profound value and consequence to a growing child. During all the years of early childhood meat and its preparations should be given sparingly, for they also create a distaste for cereals, fats, and fresh vegetables, thus depriving the system of materials needed to shield the proteids from oxidation. To provide mineral constituents necessary for the growth of bone and muscle, vegetables which contain these substances fresh from the soil must be consumed in fairly liberal proportions.

Infant Incubation; A New Incubator.—There are four main problems in incubator work, (1) heating apparatus; (2) ventilation; (3) moisture; (4) portability and simplicity, neither of which can be obtained except at the expense of ventilation. A new incubator embodying desirable features is described by J. B. DE LEE (Chicago Med. Rec., Jan. 15, 1902). The first and most important indication for the use of the couveuse is prematurity; infants are regarded as premature if they are born sooner than three weeks before term, if they weigh less than 5½ pounds, or measure less than 46 centimeters. Infants evidently premature should be put at once in the incubator; it may not be necessary to keep them there more than a few days, but the protection is especially needful during the first few hours. Congenitally feeble infants should be treated as premature; they may be of fair size, but have subnormal temperature, cyanosis or tendency to edema or sclerema. After difficult operative delivery even a full-term baby may be in a condition of shock; Lee would limit energetic measures for the revival of such infants and would place them as soon as possible in the incubator. Melena neonatorum and all congenital hemorrhagic manifestations, *e.g.*, hemophilia, multiple hemorrhages, morbus maculosis Werlhofii, are regarded as indications for the incubator. Two such cases with recovery are recorded; one had melena with eight profuse hemorrhages, the other hemorrhages from the nose and mouth and into the skin. At the Chicago Lying-In Hospital the temperature of the incubator at the outset is usually 89° F.; when the child is larger and ready to leave the incubator the thermometer is set successively at 86°, 84° and 82° F. The punier the infant, the more moisture needed; thirty to fifty degrees is a proper range. The dress of the incubator infant is all wool. Without mother's milk it is almost impossible to raise a premature infant. Artificial feeding has been abandoned; mixed feeding is somewhat better. The incubator infant needs at first no baths; it should be anointed daily with benzoinated lard. After ten days it may be bathed in water at 103° F. in a warm room. Daily massage and passive motions must be practised, with extreme gentleness at first. When the infant's temperature remains normal for days and when the child weighs about 4½ pounds, it is removed to its cradle. The period of incubator life varies from five days to four weeks. Operative cases are removed when they have recovered from the shock of the delivery. At the Chicago Lying-In Hospital 28 babies have been placed in the incubator in two years. Of these, 8 died in a few hours (these were usually frozen or in convulsions on arrival at the hospital); 3 had hemorrhagic diathesis; 2 died of atelactasis pulmonum; 1 lived four days, and 14 were reared and discharged well. Of the 14 that died, 2 were in the sixth month, 7 in the seventh month, 5 in the eighth month. Of the 14 that were saved, 2 were in the sixth month, 4 in the seventh month, 8 in the eighth month.

Primary Abdominal Tuberculosis.—Several recent papers upon this subject have expressed the belief that primary lesions of tuberculosis within the abdominal cavity were very rare, and the authors have urged this fact against the communicability of bovine tuberculosis to man. A. JACOBI (N. Y. Med. Jour., Jan. 25, 1902) expresses the view that even the few undisputed instances in which the disease has been shown to have been acquired by children feeding on milk from tuberculous cows are sufficient to make one extremely careful in regard to the use of any suspected milk. Furthermore, he believes that primary abdom-

inal lesions are much more common than is ordinarily thought. Primary tuberculous ulcerations of the intestine are seldom found, and when they are found they are mostly connected with pulmonary lesions, usually of a mixed type. Not less rare is primary tuberculosis of the mesenteric glands, but peritoneal tuberculosis is very frequent and he believes that it is due to the passage of the tubercle bacilli through some slight or transient lesion of the mucous membrane or even through a normal inner coating of the intestine.

Acute Articular Rheumatism in an Infant.—Beginning in the left elbow which was swollen, red and very tender, rheumatism attacked in succession the left wrist, knee and ankle, right knee, ankle, elbow and wrist of a child twenty-seven days old. On the sixteenth day the temperature was normal, but the pulse remained 150, though the inflamamtion in all the joints but one elbow had subsided. The treatment instituted by P. J. BARCUS (Archives of Pediatrics, Jan., 1902) was 0.06 gm. (gr. i) each of bicarbonate and salicylate of sodium every three hours three times a day, and there was no stomach disturbance whatever. One month later the right knee was again swollen, but this subsided in a week. After complete subsidence of the joint affections, the infant slowly gained weight, the heart showing nothing abnormal on auscultation, but continuing to beat at 125.

The Malnutrition of Tuberculosis.—A study of this condition is briefly summarized by F. M. CRANDALL (Arch. of Pediatrics, Jan., 1902). Wasting, anemia and other evidences of malnutrition may occur in infants long before any local disease can be detected. The disease may run a course identical with marasmus, especially if disseminated or involving only the lymph-nodes. The anemia is usually a simple anemia, and any anemia in adolescents increases the danger of tuberculous invasion. In some cases a period of anemia and wasting is followed by irregular fever and later by signs of lesions in the lungs; but in other cases the local lesions appear first, especially pneumonia. Persistent and increasing malnutrition in a child without discoverable cause is always suggestive of tuberculosis.

Double Sacculated Empyema.—A case of this kind in which a high temperature, unaccounted for by physical signs or rational symptoms, persisted for three months is reported by L. E. HOLT (Archives of Pediatrics, Jan., 1902). The spleen was much enlarged and, though repeated examinations failed to discover malarial organisms, quinine was given but without effect. After a few days a few râles were noted in the lungs, and on the ninth day the right upper lobe gave signs of consolidation. These signs soon disappeared, but nearly always thereafter there could be heard coarse râles, occasional friction sounds, and rude breathing. The temperature continued, the Widal test proved negative, and the leucocytes numbered 28,000. The sputum was negative. The child, boy of two and a half years, was steadily wasting, having all this time had a persistent diarrhea. During the last week of his illness the temperature fell to nearly normal, and remained so until death. There was no displacement of the heart at any time, no vomiting, no cerebral symptoms. The autopsy revealed a small sacculated empyema, containing one or two ounces of thick creamy pus, in each lung. One was situated on the diaphragmatic surface of the right lung and the other near the base of the left lung and close to the spine. There were interstitial bronchopneumonic areas in the right upper lobe and ulcers in the colon.

Acute Hemorrhagic Nephritis Complicating Influenza.—In an analysis of forty cases of this complication D. J. M. MILLER (Archives of Pediatrics, Jan., 1902) found it to occur eighteen times in cases under sixteen. The onset is usually early; hyaline, epithelial and granular casts are present, and sometimes blood casts, and the albumin is generally abundant. The urine was mostly scanty. Edema was observed in less than half of the cases, fever in about half. In most the duration of the disease was less than a month. The kidney lesions are those of an infectious or toxic nephritis the type of which is the scarlatiniform.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

Insects and the Spread of Disease.—In an interesting and instructive article, J. MCFARLAND (Medicine, Jan., 1902) reviews the change in attitude toward certain insects, whereby those once thought merely annoying are now considered disseminators of disease. Insects may carry on their bodies disease-producing microbes and occasion infection by alighting upon wounds or indirectly by alighting upon foodstuffs. They may carry within their bodies germs which may subsequently be deposited with their feces; tubercle bacilli have been detected in the feces of flies fed on tuberculous sputum. Suctorial insects by biting a diseased animal may carry infection to the next animal bitten. They may take infectious germs into their bodies and transmit them to their offspring, bites of which are infectious. Insects may take in parasitic organisms and transmit them to other animals in some, changed form in which they are infective, for example, the change of the malarial organism in the mosquito's alimentary tract, the formation of "blasts," and their escape with the salivary secretion when the insect bites. In like manner is yellow fever transmitted, this transmission not being direct, but requiring an interval of ten days before the mosquito's bite is infectious. A third disease transmitted by the mosquito is filariasis. Insects, such as flies and roaches, may become infected, die, fall into foodstuffs, and thus impart infection to man. Flies have been known to die from the infection of bubonic plague.

New Method of Isolating Typhoid Bacillus.—An attempt was made by CAMMER to isolate the bacillus typhosus upon the theory that it alone would pass through a porous earthen filter. U. BIZZI (La Rif. Méd., Jan. 3, 1902) has proven that the bacterium coli not infrequently passes through the porous diaphragm simultaneously with or prior to the bacillus of Eberth. To overcome this objection, the writer suggests that, previous to filtration, the substance to be examined for typhoid bacillus be introduced into bouillon to which has been added a serum which will agglutinate the bacterium coli; by this means the bacillus typhosus alone will pass through the diaphragm. The agglutinating serum for the bacterium coli may be readily obtained by following the method of Pfeifer in the preparation of agglutinating serum for the bacillus typhosus, care being exercised to inject simultaneously into the rabbit which is to furnish the serum different varieties of the bacterium coli, so that a serum may be obtained which will equally well agglutinate all varieties. The quantity of serum to be added to the bouillon depends naturally upon its agglutinating power; hence it is well to make several tests in order to obtain the proper dilution.

Effect of Quinine on Plasmodium Malariæ.—An exhaustive study of this subject has been made by D. LO MONACO and L. PANICHI (La Rif. Méd., Jan. 2 and 3, 1902) in which the effect upon the plasmodium of solutions of quinine bisulphate in various degrees of concentration has been carefully noted. Microscopical examination of freshly-prepared blood specimens demonstrated reaction of the plasmodium to a drop of the solution, placed upon the margin of the cover glass,

proportionate to its strength; weak solutions producing excitation and emission of pseudopodia, stronger solutions causing detachment of the parasite from the red blood-cell. The youngest, non-granular forms of the plasmodium proved to be the least influenced. The practical value of these observations rests upon the determination of the strength of solutions necessary to effect such detachment in the various forms of the parasite; in the authors' experience, a dose of quinine, equivalent in strength to the solution causing this phenomenon, administered to a patient, was sufficient to cause disappearance of malarial paroxysms. Acting upon this, an attempt has been made to establish a rational dosage in each type of malarial infection. Clinical observation also showed that a smaller dose was necessary to prevent recurrence of paroxysms, if administered at the onset or height of pyrexia, than when given between paroxysms; the supposition being that antiparasitic substances which supplement the effect of quinine circulate in the blood during pyrexia.

Glycogen and Glucose in Muscles after Death.—After reviewing the literature of this subject, and quoting conclusions drawn by various observers, notably those of Lacassagne and Martin, who hold that the presence of both substances indicates rapid death due to violence, the absence of both slow death not due to violence, and that the presence of glucose without glycogen points to sudden death after prolonged illness, C. CURINI-GALLETTI (Gazz. degli Osped., Dec. 29, 1901) gives the results of his own investigations as follows: (1) Glycogen is found, in both muscles and liver, in greater quantity after death by violence than after slow death; this is true, though not to the same degree, of glucose; therefore, the quantitative estimation of glycogen is of greater value than that of glucose in the differentiation of the mode of death. (2) Estimation of glycogen and glucose in the liver yields more positive indications as to the manner of death than estmation of those substances in the muscles.

Angiosarcoma of the Clavicle.—This group, first described and named by Kolaczek, is well represented in the description of a large specimen recently removed from a girl of sixteen by G. T. BEATSON (Brit. Med. Jour., Jan. 18, 1902). The surgicopathologic history of the case is as follows: In seven months a swelling, the size of an infant's head developed in the region of the left clavicle. The patient could assign no cause for its appearance; it began as a small tumor which was freely movable beneath the skin; it gave no symptoms save one of alarm from its great size and rapid growth. On palpation it was firm and elastic, almost cystic in character. There was neither fluctuation nor pulsation. It was firmly anchored at its base, but it gave no pressure symptoms. A skiagraph of the parts showed that, with the exception of a small part at its outer end, the left clavicle had disappeared. Operation confirmed the diagnosis and the patient made a good recovery. The gross pathology of the neoplasm was as follows: It was a globular mass, flattened anteroposteriorly. It measured 5½ by 3 inches and had a fairly-marked capsule to which masses of fascia and muscle were adherent. On section it was "fleshy." The microscopical examination of the mass showed it to be sarcomatous and of the round-celled variety. The very striking and peculiar characteristic, however, was the presence in each group of cells, and generally in the center of it, of one or more well-marked blood-vessels around which the cells are arranged concentrically. The very intimate relation of cell to vessel in the sarcomata is well known; some pathologists go so far as to say that all such neoplasms take origin in the blood-vessels. However this may be, there is undoubtedly a variety of sarcoma characterized by masses of round cells and springing from the adventitia of the vessels around which they are grouped. In this small group, as in the present case, the endothelium is entirely normal; this fact clearly distinguishes it from the better known endotheliomatous sarcomata. By the mechanics of their growth the angiosarcomata present a more or less constant alveolar structure. They are occasionally melanotic and suffer the usual degenerations. The after-history of the case will be interesting. Six months after removal some small glands were removed from the region of the scar, but while sarcomatous in type they were diagnosed as inflammation, largely because of the continued good health of the patient. Metastasis in the angiosarcomata, except when they are pigmented, is rare, but opinions as to the probability of local recurrence differ; Senn states that after-growth is very rapid; Stengel that it is very rare; the tumors are classed by him as in a measure benign. This case, so far, supports the latter view; two years have passed since the operation and there are no signs either of metastasis or of local recurrence.

OBSTETRICS AND GYNECOLOGY.

Early Ectopic Gestation.—That the three classical gross symptoms of ectopic pregnancy, *i.e.*, pain, hemorrhage, and pelvic tumor, are not the essentials of an early ectopic gestation is shown by E. K. BROWD (Phil. Med. Jour., Jan. 18, 1902) in a series of cases observed by himself and others. His own six cases were all less than six weeks pregnant and the symptoms of pain and tumor were entirely absent, the only sign being an untimely oozing of blood from the uterus. As pain is the result of an overfilled and pathological condition of a tube and takes place usually when adhesions are formed, it is not apt to come on until the later stages, the third month or more. The local tumor also indicates an advanced stage. The oozing of blood entirely depends on the location of the ovum in the tube; the flow may escape by the fimbriated extremity into the abdominal cavity and so give no external evidences. It may also be stated that not every interrupted hemorrhage from the uterus speaks for the existence of an extra-uterine pregnancy, but may be caused by a pus tube, cystic disease of ovary, imperfect abortion, polypoid endometritis, etc. In discussing the treatment, the analogy is drawn between early ectopic gestation and suspected appendicitis, as in the latter case the best results are obtained by early interference. So bearing in mind the comparative safety of exploratory laparotomies, he recommends that in every suspicious case of extra-uterine pregnancy operation be done when its existence is quite positively known, and also in cases in which dark and baffling symptoms may cause doubt as to its presence.

Decreasing Fecundity.—The progress of medical science in general is shown in the control of infectious diseases and a decrease in the death-rate. Although a like positive result ought to be expected from the progress of obstetric and gynecic science, this is not the case, but the rate of sterility and the number of miscarriages are increasing and the birth-rate is growing steadily less, particularly in this country. These rather startling facts are made the subject of a paper by G. J. ENGELMANN (Phil. Med. Jour., Jan. 18, 1902). From a collection of available statistics he finds a decreasing birth-rate in all European countries, lowest in France; about the same or even less in the United States, far below that of France for the American born of this country, much higher for the foreign born (2½ times). The American statistics are based on those of six States, others being incomplete. These figures, however, are relatively correct. Although the fecundity of the American-born woman is lower than that of the

woman of any other country, it is found that intermarriage with a foreign male yields a higher fecundity than with an American husband. The causes for such decrease are found principally in the present social conditions which inspire various methods of prevention of conception and family limitation. Health is far more common as the badge of motherhood, while early exhaustion and premature decrepitude are much more likely to issue from the various methods resorted to for the avoidance or prevention of conception. The author believes that the latter are factors more potent in the causation of decreasing fecundity than is the progress of gynecic science for the contrary.

Adhesion of the Placenta.—This is always a troublesome and often an unexplainable condition in childbirth. A. NORDMANN (Arch. f. Gyn., Bd. 65, Heft 1, 1901) presents the following conclusions upon the subject: The presence of anatomical changes as the cause of the adherence of the placenta is beyond all question. There are, at the present time, two types of this adherence. The first type depends upon changes in the decidua serotina. The second type is caused by a growing together of the muscular tissue of the uterus and the uterine surface of the placenta. The cause of the serotinal form seems to depend upon injuries of the mucous membrane of the uterus, such as repeated separation of the placenta, the application of caustics, etc. The muscular form is probably the most common and is very likely due to a variation in the normal insertion of the organ upon the uterus.

Tuberculosis of Female Genital Organs.—Deductions from an extended study of this subject are tabulated by C. MERLETTE (Arch. d. Ostet. e Gin., No. 12, Dec., 1901) thus: (1) Tuberculosis of the genital organs is more frequent in women than in men; (2) this preponderance in the female is partly due to the closer relation between the genital organs, peritoneum and intestines, partly to infective causes due to functions of generative life; the condition is rare before puberty and after the menopause; (3) it is generally secondary, but may be primary; (4) tuberculosis of the uterus is more frequent than is generally supposed; (5) genital hypoplasia predisposes to tuberculosis; (6) cervical tuberculosis may be miliary, catarrhal, or ulcerative; (7) tuberculosis of the body of the uterus occurs in three forms, endometrial, interstitial and mixed; (8) demonstration of the bacillus in uterine secretions is rarely possible; (9) diagnosis by curettage is conclusive only in endometrial tuberculosis, the scrapings showing giant cells and tuberculous follicles; (10) of great semiological value is the injection of uterine secretions into animals, both in tuberculosis of the uterus and in salpingitis; (11) the tubes are especially prone to tuberculous infection; (12) tuberculous salpingitis is almost invariably bilateral; (13) there are three forms of tuberculous salpingitis; peri- and endosalpingitis, and parenchymatous; (14) nodules in tubal isthmus are not pathognomonic of tuberculosis, but frequent in this condition; they are often congenital or may originate in chronic salpingitis; (15) the ovaries show a certain resistance to tuberculosis; (16) more than one-half of tuberculous ovaries become cystic; (17) tuberculosis seems to originate in the stroma of the ovary and not in the ovisacs; (18) of value in the diagnosis of genital tuberculosis is digitorectal examination, which sometimes reveals a granular or nodular condition in the cul-de-sac of Douglas and about the recto-uterine ligaments; (19) consideration of the patient's general condition and history are important to the diagnosis.

Ovariotomy During Pregnancy.—This is an operation which occasionally is necessary. E. OEHLER (Arch. f. Gyn., 1901, B. 65, H. 1) gives an exhaustive study of the subject and states the following facts concerning its effects on the mother and child: The mortality of ovariotomy during pregnancy is not greater than at any other time. Some authors state that interruption of pregnancy by abortion or by untimely birth and by death of the mother occurs in perhaps 22½ per cent. of the cases. That means that in every four or five operations an unfortunate result may be looked for. Permanent damage to the mother is very rare, abnormalities of childbirth ascribable to the operation have not been noted. The earlier the operation is done, the better the results will be as a rule. So far as the immediate results are concerned, it appears to make no difference whether one or both ovaries are removed. Vaginal ovariotomy is as a rule not to be undertaken during pregnancy.

Puerperal Septicemia.—The frightful mortality which has attended these cases led the American Gynecological Society in 1898 to appoint a commission to investigate and propose some line of treatment. W. R. PRYOR (N. Y. Med. Jour., Dec. 25, 1902), a member of this commission, has analyzed all the cases which have occurred during the past five years and gives some very striking views. All cases may be divided into the saprophytic and septic types. In the former cases the infection is always superficial, is accompanied by only moderate fever, and carries no risk to life; but, inasmuch as this form of infection renders the patient susceptible to the implantation of more virulent germs, saprophytic infection has a great importance and demands treatment of a preventive nature. Therefore, the dead material within the uterus must be removed. About seventy-five per cent. of cases are non-septic and about twenty-five septic, so that curettage is indicated in about three-fourths of the cases. The best authorities upon the treatment of the septic cases believe that no local treatment should be applied to the uterus, for the infection is deep within the uterine tissue and cannot be removed by simple curettage. Interference merely increases the area of infection and can only do harm to the patient. Williams and Krönig report a mortality of only five per cent. in septic cases and they never treat the uterine cavity. It, therefore, becomes important to determine in a given case whether the infection is saprophytic or streptococcic; this can be done usually by bacteriological examination, if the clinical symptoms are obscure. A saprophytic case demands curettage, but a streptococcus infection is greatly endangered by such a procedure.

Lumbar Anesthesia in Obstetrics.—The advantages of anesthesia of the entire region below the umbilicus in labor are not to be denied, says C. S. GAUTIER (Rev. Méd. d. Canada, Jan. 1, 1902). Anesthesia lasting two hours may be produced by spinal injection of one centigram of cocaine; points in its favor, aside from the analgesia produced, are said to be as follows: The patient is more easily managed; the soft parts, perineum, etc., are less exposed to laceration; uterine contractions are stronger and more frequent; and danger of hemorrhage from uterine inertia is reduced to a minimum. The intensity of uterine contractions induced by intra-arachnoid injection of cocaine constitutes a contraindication to its use in pregnancy before term. The pros and cons of spinal anesthesia, as shown by the experience of obstetricians and surgeons, are set forth with an apparent preponderance of opinion in its favor.

THERAPEUTICS.

Heliotherapy in Pharyngitis.—The solar rays have been utilized in the treatment of pulmonary and leprous tuberculosis; the simplicity and economy of this method of treatment are points in its favor, although its dependence upon weather conditions pre-

vent its more general use. FORNS (Rev. Esp. Med., Dec. 20, 1901) has met with most encouraging results in the treatment of pharyngitis by this method, both in acute and chronic cases. The patient is directed to hold the mouth open, allowing the sun's rays to pass well to the back of the throat for eight to ten minutes; within this time relief from pain and discomfort is experienced. The procedure is repeated as the patient's condition demands it. The author believes that the curative effect is due to (1) attenuation of the pathogenic power of micro-organisms through strong light; (2) thermic action upon inflammation, (3) and chemic effect upon the local nutrition rendering the tissue more resistant.

Ecchymosis of Eye.—The ordinary "black eye," if seen at once, write C. A. WOOD and T. A. WOODRUFF (Medical Standard, Jan., 1902) is best treated by cold applications (cloths wet with ice-water) or by an evaporating lotion such as the following:

℞ Liq. plumbi subacetatis.....3j
Alcohol 3j
Aq. dest. q.s. ad.....Oj

When a definite blood-clot has formed, the skin should be incised or two or three leeches applied to the orbital margin. After two days the only thing to do is to apply flesh-colored paint to hide the discoloration.

Abrin and the Digestive Ferments.—It having been shown that abrin, the active principle of jequirity-bean, acts much more feebly by mouth than by subcutaneous or intravenous injection, S. K. DZIERZGOWSKY and N. O. SIEBER-SCHOUMOFF (Archives des Sciences Biologiques, Vol. VIII., No. 5, 1901) instituted experiments and reached the following conclusions: Abrin can pass through porcelain filters, and its toxicity is enfeebled to a slight degree by hydrochloric acid of the strength found in gastric juice, or by the various digestive ferments. Given by mouth it is partly destroyed in the organism, and, under the influence of conditions existing in the digestive tube, not only loses its poisonous properties, but has its other powers modified. For example, an extract of the excretions containing it can no longer cause a conjunctivitis or bring about the characteristic pathological lesions.

Organic Preparations in the Treatment of Fatty Stools Occurring in Pancreatic Disease.—Serious interference with the absorption of fats unaccompanied by icterus but associated with diabetes mellitus is described somewhat rarely in medical literature. Two dozen cases have been collected by H. SALOMON (Berl. klin. Woch., Jan. 20, 1902). Very few autopsies are reported in cases belonging to this class, but it is reasonable to assume the presence of pancreatic disease or of some cause which shuts off the pancreatic juice from the intestinal canal. Fles and Langdon-Down were among the first to use pancreatic substance or pancreatin in the treatment of serious cases of steatorrhea. In the first case described by Salomon the fat in the stools of a glycosuric patient was equal to about 50 per cent. of the fatty input. The steatorrhea was promptly diminished upon the administration of pancreatic substance and of pancreatin-Aachen. During the period of treatment with these preparations N—resorption increased, while the elimination of fat was diminished to less than 20 per cent. of the quantity represented in the patient's diet. Recent investigations indicate that in diabetics the acetone-bodies which appear in the urine are products of fat. In conformity with this theory Salomon found that acetone elimination was relatively large in his patients during the periods when pancreatin was being administered and when the absorption of fats was relatively good.

Electricity in the Treatment of Sprains.—The use of electric currents in cases of sprain is not so frequent as it ought to be in view of the benefits which it offers. CHARRIER and PLANET (La Presse Méd., Jan. 8, 1902) enumerate these benefits as follows: Immediate cessation of pain results from the first treatment. Thanks to the analgesia produced, movement of the articulation becomes possible. The disappearance of the pain is, however, but temporary, necessitating renewed treatment. The electric current promotes absorption of the periarthritic exudate in cases of recent sprain. In long-standing cases, in which the functional prognosis is grave, the faradic current effects a degree of amelioration which ranks it among the most valuable of available measures. A rapidly intermitting induced current is employed. The electrodes are placed over the articulation, the negative electrode in contact with the most painful area. One or two sittings daily, of a duration of from five to ten minutes, give marked relief.

Suggestion in Medicine.—Susceptibility to suggestion is present in healthy individuals and is probably much greater in persons suffering from disease. The adult patient consulting a doctor is in a very receptive mood and a ready recipient of any suggestion a physician may make. If the patient is apprehensive, writes G. C. SMITH (Boston Med. & Surg. Journal, Jan. 30, 1900), great caution is necessary in the method of examination; a pessimistic patient is more open to evil suggestions than to good ones. To secure most good from suggestive therapeutics, one should not say the remedy *may* relieve, but that it *will* relieve. Only one sugestion should be made at one sitting, as the mind is best influenced by keeping one thought dominant for several days, until the idea becomes fixed. Suggestions should be founded on facts, some of which at least can be demonstrated to the patient. The pernicious influence of evil suggestion is illustrated in cases of traumatic neurosis. Another evil result of suggestion is seen when surgeons summarily dismiss their patients immediately after operation without reference to subsequent treatment. Aches and pains return without warning; friends are consulted, the surgeon is criticized and the profession falls into disrepute. A long time may be required to rid a patient's mind of ideas jeopardizing health, which have been allowed carelessly to take root. Smith recommends thorough psychological preparation for the medical school, as a means to more exhaustive examination, keener observation and better control of patients.

Treatment of Cardiac Dilatation.—"Like dress, fashions of disease 'come in' and, after lasting a variable period, 'go out.'" Recently a remarkable popularity for appendicitis has been noted, and many have fallen victims to the operation. Enteroptosis and adenoid growths are conditions which now receive their full share of attention. Although weak and dilated hearts have undoubtedly increased relatively in numbers during the past few years, fashion has been assisted in the creation of this lesion, according to I. B. YEO (Practitioner, Jan., 1902) by the dire influences of the grippe, excessive muscular exercise and the tobacco habit. He attributes many dilated hearts, especially in middle-aged people unused to exercise, to the unreasonable cycling habit. Many young men of rather small stature are proud to boast of their health and athletic prowess, little dreaming that their efforts to compete with men of much greater power has caused a much dilated and hypertrophied heart. He believes that the pernicious influences upon the heart occasioned by influenza may be largely avoided by a prolonged period of physical rest. He also insists that too little attention is paid in the later stages of failing compensation to this method of treatment—"rest in bed." Baths and "resisted exercises" have become too popular and

are often indiscriminately employed. He accounts for the beneficial results of saline baths and the effect which they have in decreasing cardiac dulness by the modification of the type of respiration which is occasioned. The superior costal type takes the place of the abdominal type, and there is an increase in expansion of the upper parts of both lungs. In mild cases general tonics are all that are necessary. When dyspnea and troublesome palpitation are present the following prescription is of great use:

℞ Ferri et ammon. citratis.....gr. lxxx
Tinct. digital.....mxl
Sprt. ammon. arom.....3ij
Infus. calumbæ, ad.....3viij
M. et sig. One ounce twice daily after meals.

In less serious cases the following may be used as a good tonic:

℞ Quininæ sulph.....gr. xvj
Tinct. nucis vom.....3ij
Vel tinct. stroph.....mxl
Ext. cocæ fl.....3iv
Spts. chloroformi.....mlxxx
Aquæ, ad.....3viij
M. et sig. One ounce twice daily before meals.

In anemic cases iron and nux vomica are very beneficial when followed by an aperient to keep the bowels in condition:

℞ Ferri sulph. exsic.....gr. xxxvj
Saponis.....gr. xviij
Pulv. nuc. vom.....gr. xxiv
Aloin.....gr. iv
M. et Div. in pillulas XXIV. One pill twice daily.

Lecithin in Tuberculosis.—The therapeutical application of lecithin has been studied in relation to various diseases. H. CLAUDE (Rev. d. l. Tuberculose, Vol. VIII., No. 4, Dec., 1901) has sought to ascertain by experimental means its effect in tuberculosis. Animals were first inoculated with tuberculosis, two-thirds of the number so treated receiving lecithin by mouth or subcutaneously; the remainder received no medicament and succumbed to a general miliary tuberculosis about a month after inoculation. In those to whom lecithin had been administered, life was prolonged from one and a half to six months. In every case the body weight was preserved and in some instances it was increased; diminution and elimination of phosphates was diminished and elimination of urea increased. Necropsy showed that the disease had taken a more benign form and, instead of giving rise to a diffuse infiltration or caseation and ulceration, there was a tendency to sclerosis with limitation of the lesions. This modification of the tuberculous process, contrasted with its course in the untreated animals, would seem to be due to increased resistance given to the defensive elements of the organism through the introduction in excess of a substance already existing in the body.

Creosote in Pneumonia.—In a series of eighteen patients treated by this drug at the Roosevelt Hospital, W. H. THOMSON (Med. Rec., Feb. 1, 1902) believes that many favorable results could be attributed to remedy. Only one death occurred, but as several were mild cases no deductions could be made in regard to mortality. The peculiar course of the temperature after the administration of the drug seems to denote a specific action. The disease terminated by crisis in only five days. In most of the cases there was a fall of from one to three degrees within twenty-four hours, followed by a rise and an irregular course for several days. The drug seems to act very favorably upon that important complication of pneumonia, tympanites. When given as the carbonate of creosote the stomach seems to have much greater toleration. About 180 grains are given in twenty-four hours, and no depressing effects upon the circulation have ever been noticed. Furthermore, there need be no fear of an injurious effect upon the kidneys. His usual formula is:

℞ Creosot. carbonat.....ʒss
Glycerini.....ʒi
Aq. menthæ, ad.....Oss
M. et sig. Half an ounce in water.

SKIN AND GENITO-URINARY.

Psoriasis and Glycosuria.—The true etiology of psoriasis is still in doubt. English and American writers especially regard the disease as a dyscrasia, having possible etiological relations with rheumatism, gout and diabetes. Statistical evidence does not support the view that glycosuria and psoriasis are closely related, says W. PICK (Berl. klin. Woch., Jan. 20, 1902). Weinbrenner found diabetes to be present only once in over 500 cases of psoriasis, Schütz once in 100 cases, Nielssen once in several hundred observations. Bulkley was never able to find sugar in the urine of his numerous psoriatic patients. Pick experimented with 50 cases of psoriasis and 50 cases of various skin diseases, including eczema, scabies, prurigo, furunculosis, pityriasis rosea, urticaria, etc. To these patients 100 grams of grape-sugar was given two hours after breakfast; the urine was later tested for sugar. In 2 out of 50 psoriatics alimentary glycosuria was produced; 3 of the other 50 patients, all sufferers from widespread eczema, showed alimentary glycosuria. It appears that alimentary glycosuria is not more frequent in patients having psoriasis than in those having other chronic cutaneous diseases. It is not shown, however, whether psoriasis is to be regarded as a dyscrasia, or whether it is a neurosis, as French authors believe, or whether it is a local parasitic affection or dermatomycosis, as Neisser, Unna and others teach.

Indications and Limitations of Massage of the Prostate Gland.—The indications for massage of the prostate, as defined by L. E. SCHMIDT (Chicago Med. Rec., Jan. 15, 1902) are all those inflammatory diseases of the prostate gland in which it is desirable to enhance absorption, or in which the prompt and regular removal of accumulated secretion is desirable. Massage is furthermore indicated in insufficient development of the prostate and prostatic sphincter in youthful individuals and also in certain cases of sexual exhaustion. Stimulation of the circulation hastens the removal of inflammatory infarctions and congestions such as occur in simple catarrhal prostatitis. After a posterior urethritis symptoms may remain which are referred to the region around the perineum and anus. There may be no apparent urethral cause and prostatic swelling may be slight or may even be absent. Massage is obviously contraindicated if fever be present or if the prostate be exquisitely tender. In essential neuroses of the prostate great caution is necessary; under massage the prostate not only becomes exquisitely sensitive, but the general condition of the patient often changes for the worse. Massage of the prostate is done with the index finger, which is protected with rubber and well oiled to avoid unnecessary pain. In order to reach as high as possible one should avoid pushing against the coccyx and should exert pressure toward the perineum. In selected cases the use of instruments or of metal tips for the fingers may be necessary; in most cases the finger can reach all parts of the prostate and can carry out a thorough massage with greater delicacy and exactness than can be attained when instruments are used. In inflammatory cases very light rotating and stroking movements should be used; in old chronic cases, in which secretions have collected in cavities, energetic pressing movements will more effectually express such secretions.

Two or three minutes are required for each treatment, and the number of these each week depends upon the case. In persistent cases a pause of several weeks may be advisable.

SURGERY.

Surgery of Obstructive Jaundice. — Contributions from this field are perhaps more welcome than from any other in the broad domain of surgery, and one from the hand which has done most to advance knowledge in this line must be particularly welcome. A. W. MAYO-ROBSON (Brit. Med. Jour., Jan. 18, 1902), in reviewing his experience with 200 recent cases, illustrates with a fecundity of brilliantly massed facts that, in expert hands, it is as safe to operate for obstructive jaundice as for any common abdominal lesion. Unfortunately the paper is short and he devotes a major part of it to the diagnosis, which will always be the paramount problem in these cases. The following causes of chronic jaundice must be taken into consideration: (1) Common duct cholelithiasis; (2) chronic pancreatitis; (3) simple stricture of the common bile-duct; (4) inflammatory adhesions causing pressure on, or stenosis of, the hepatic or of the common bile-ducts; (5) hydatid disease of the liver pressng on, or discharging into, the bile-ducts; (6) gummata implicating the ducts; (7) chronic catarrh of the bile-ducts; (8) cancer of the common bile-duct; (9) cancer of the head of the pancreas; (10) cancer of the liver associated with jaundice due either to catarrh or to pressure; (11) cirrhosis of the liver; (12) other rare causes, such as aneurism of the hepatic artery or of the aorta, and other tumors of the liver, gall-bladder, pylorus, or kidney, pressing on or occluding the common bile-duct. It will be seen that surgery holds out a good prospect of cure in the first five cases enumerated; that medical treatment alone is advisable for causes 6 and 7, and that in the remainder with certain exceptions relief can be hoped for only from medical or surgical treatment. As in many other conditions, pain is the most valuable guide in establishing a differential diagnosis between these possible causes. A painless onset of chronic jaundice points to chronic catarrh due either to cancer of the liver or of the head of the pancreas, or both. On the other hand, pain in the upper abdomen, followed within twenty-four or thirty-six hours by jaundice, strongly suggests cholelithiasis. Here the jaundice is less intense and is pretty certain to be accompanied sooner or later by intermittent fever, chills and sweats, with very marked icteric fluctuations. Ascites is very suggestive of malignant disease; it points to it perhaps more strongly than any other single symptom. Other diagnostic anti-operative aids are as follows: Jaundice in cancer of the bile-ducts and head of the pancreas tends to become absolute; in almost every other condition it is variable. Fat in the feces and glycosuria, with very rapid wasting, are very suggestive of pancreatic trouble. If the anti-operative signs be difficult of true interpretation, those found after the abdomen is opened call for as much or more acumen. Adhesions in the neighborhood of a contracted gall-bladder suggest stones but this may be induced by a simple pyloric ulcer. If the head of the pancreas be swollen and harder than normal one should not too hastily pronounce it cancer; it may very probably be a simple chronic pancreatitis, curable by cholecystotomy. Again the discovery of enlarged glands does not warrant a gloomy prognosis, for discrete nodules are frequent in common-duct cholelithiasis and in chronic pancreatitis. If they are fused, however, the outlook is bad. The tumor composed of matted omentum and the viscera adjacent to an inflamed gall-bladder always presents a conundrum which aspiration even may not solve; it should not be pronounced malignant until the liver has been carefully inspected for nodules. The treatment depends on the diagnosis (1) If it be doubtful, an exploratory incision is indicated if the patient's general condition will permit. (2) If malignant disease be positively diagnosed, operation can, with some few exceptions, do but little good save when all the diseased tissue can be removed. (3) If gall-stones or any of the first five factors be diagnosed, operation is decidedly advisable if the patient be at all able to bear it. The two great dangers are hemorrhage and shock, accidents such as are liable to follow any severe abdominal shock. A study of the unsuccessful cases will no doubt reduce the mortality even lower than it already is; within the last year it has dropped in choledochotomy from 14.5 to 7.4 per cent. The anti-operative treatment of ordinary cases is in no way different from that given for a general laparotomy, but when a hemorrhagic condition is expected calcium chloride is fed in heroic doses, as this has been found to aid materially in limiting capillary hemorrhage by increasing the coagulability of the blood. An efficient aid in preventing shock is the use of a heated operating-table; another, even more important, is a decrease in the time of operating; exploration must be done in from ten to fifteen minutes, choledochotomy in a half hour; the more complicated operations should never take over one hour.

EYE, EAR, NOSE, AND THROAT.

Significance of the Tonsil.—It is almost universally believed that the faucial tonsil has a function to perform and should never be removed unless the operation is strongly indicated. F. H. BOSWORTH (Med. Rec., Jan. 11, 1902) has for many years held the view that the presence of a tonsil of any appreciable size means a diseased organ rather than a normal, functionating one and that there can be no ill results from its removal. The lacunæ are especially liable to harbor bacteria of all descriptions, and when the tonsil is swollen and enlarged it proves to be an excellent medium for systemic infection. In removal of the tonsils he always uses chloroform with children, but not to the surgical degree, and has never had any ill-effects. He has discarded the tonsillotome because it does not fit the tonsil and thorough extirpation is, therefore, not possible. The cold wire snare is preferable and can be more effectively used in removing a second portion. Furthermore, the danger from hemorrhage even in adults is, thus, almost entirely eliminated.

Aural Complications of Influenza.—Attention is called to the gravity of the inflammatory processes in the ear resulting from influenza by S. M. SMITH (Phil. Med. Jour., Jan. 11, 1902). "Hemorrhagic otitis" has long been known as the distinguishing feature of otitic influenza. Mastoid implication is, however, present in all severe cases, a large number of which require operative interference, and meningitis, lateral sinus thrombosis, intracranial and extradural abscesses as sequellæ are encountered more frequently in each succeeding epidemic. It is well to examine the aural discharges for the presence of the bacillus of influenza. As regards treatment and prophylaxis, emphasis is laid on attending to aural complications at the very inception of the attack. Absolute rest in bed, with free diuresis, diaphoresis, catharsis and restricted diet, is followed by local measures, such as hot instillations, not necessarily medicated. Blood-letting in front of the tragus, to be effective, must be early. As soon as the membrana tympani shows any distention it should be incised. Hot irrigations should be followed by thorough drying and insufflation with aristol or nasophen.

THE MEDICAL NEWS.

A WEEKLY JOURNAL

OF MEDICAL SCIENCE.

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HEREDITY AND ENVIRONMENT.

IN this issue of the MEDICAL NEWS, we present among our original articles a very full résumé of the recent interesting investigations and opinions with regard to the important subject of heredity. One really striking advance in our knowledge of this subject is the very different appreciation of the great influence of the ovum in heredity as compared with that of the spermatozoon. At the end of the eighteenth century and even at the beginning of the nineteenth, it was the custom to think that the spermatozoon was the most important generative element for the development of the new human being. The *homunculus* of which Sterne has so much to say in Tristam Shandy, the original germ particle which was to receive only its nourishment from the ovum, was supposed to be the preformed embryo as it issued from the male testicle. It was not too much to expect then, as was the habit in that day, that the father was the dominant influence in matters of heredity. Now almost exactly the opposite theory holds and the influence of the ovum is considered the prevailing factor.

This change of opinion is partly due to the fact that the significance of environment for the growing organism is better realized than was formerly the case. After all from the first moment of independent existence the germ of the new being is submitted to the environmental influences concomitant with its drawing its nourishment from the maternal tissues. Perhaps there is on the whole in our day a tendency to exaggerate the influence of maternal factors on the development of the organism and especially to demand too large a rôle for the ovum as the basic germ-particle, relegating the spermatozoon to the function of merely supplying vital stimulation. It must be remembered that the birth of twins is distinctly a family trait that can sometimes be traced for generations without a break. Multiple births used to be attributed almost entirely to the influence of the ovum and to certain inherent family tendencies. Statistics, however, show that, while multiple births recur in families, they follow the male side of a family as well as the female. It has often been noted that where twins have appeared in a first marriage, they also are prone to occur in a second marriage of the husband as well as of the wife. These facts would seem to indicate for the spermatozoon more actively developmental qualities than are sometimes allowed at present.

Beyond the sphere of the mechanism of inheritance comes the interesting question of the matter of heredity—what can be inherited? While most medical men seem to think that inheritance involves the direct transmission of qualities from parent to offspring, there is at present no scientist who would willingly concede the direct inheritance of acquired qualities. It is not unusual to hear it said that a heart lesion in a patient is not surprising as the family history shows that one of the parents had a similar lesion. Almost needless to say there is no such hereditary transference as this. Early degeneration of the kidneys is sometimes explained on the ground that a parent was suffering from chronic kidney disease at the time of conception. This is of course quite as inadmissible an example of *post hoc ergo propter hoc* as the former case. What may be transmitted in such case is not the pathological lesion itself, but a weakened habit of body that leaves the organism liable to disease early in life and that may well cause the descendant organism to be affected not unlike the parent if it has to go through stresses and strains in life. This phase of heredity Dr. Kiernan has discussed very fully in the article already referred to and very little if anything can be added to the conclusions he leads up to so lucidly.

The question of sexual heredity, because it involves the future of the race from its close con-

nection with the reproductive instinct and because it represents one of the most intricate problems in heredity, must continue to attract unfailing attention. Gradually the realization has been gaining ground that human beings are differentiated into sexes not alone by their sexual organs, but almost by every cell in their bodies. What is to all intents and purposes as far as sexual organs go, a man, may still possess many of the characteristics of the woman. There may even be the physical peculiarities of a distinct feminine waist line and womanly breasts with the other organs those of the male. Not infrequently Nature does not seem to quite make up her mind as to whether an individual is to be male or female. In this case it is not surprising to find in the male with certain easily recognizable female peculiarities of voice and gesture and posture and ways a tendency to homosexuality that shows how deep are the wellsprings of these seemingly superficial characteristics. Many of the unfortunate sexual perverts and inverts are of this class. They are much more to be pitied than to be blamed and this aspect of the question deserves the careful consideration of all well meaning men who are brought in contact with unfortunate creatures.

There are many things in the body of scientific observations that are gathering around the problems of heredity that are worthy of the attention even of the busy practitioner. Obscure questions in pathological development are illumined not a little by recent discoveries. We have gotten away from heredity as a cast-iron predisposition to certain definite results. As Dr. Kiernan says, "Heredity is an initial velocity," but many modifying forces are at work and life is the resultant of all the forces. "Heredity is a prophecy of what *may* be, not a destiny which *must* be." There are always in the subject's own hand, and especially in those of the guardians of the very early years, possibilities of guidance in development that may offset or greatly aid hereditary influences. This is especially true of the intrauterine life. In a word, we are not the creatures of mere circumstance, but the resultants of many factors that may under favorable conditions always be made to bring out the tendency to true evolution rather than degeneration.

HEPATOPANCREATIC CHOLECANATOMY.

IT is impossible to appreciate the pathology of acute hemorrhagic pancreatitis, or, indeed, of almost any lesion in the hepatopancreatic region, without a clear mind picture of the anatomy of the parts. That these are multitudinous may be gathered from noting the review on a near page of Mayo-Robson's recent article on the "Surgical Treatment of Obstructive Jaundice," in which he endeavors to differentiate this condition from a dozen close-of-kin disorders. Also from a study of the recently-published work of Hans Kehr. His classification can very profitably be compared with that of Mayo-Robson. It is as follows: (1) Stone in healthy gall-bladder, cystic duct free. (2) Stone in a previously inflamed gall-bladder, ducts free, adhesions. (3) Subacute cholecystitis without stone, adhesions. (4) Acute cholecystitis with stone. (5) Acute cholecystitis in contracted gall-bladder, ducts closed. (6) Hydrops of gall-bladder. (7) Empyema of gall-bladder, stone in cystic duct. (8) Carcinoma of gall-bladder. (9) Stone in common duct, acute obstruction. (10) Stone in upper segment of common duct, chronic obstruction. (11) Stone in common duct near papilla. (12) Obstruction of common duct from pressure of tumor on other organs.

It will thus be seen that the disorders of these parts are as manifold as they are confusing. In a previous editorial it is stated that a frequent cause of pancreatic disorder is the abnormal flow of bile into that organ. Turning to the classic anatomy of the liver ducts we find them described as the hepatic, the cystic and the common. Two main trunks of nearly equal size issue from the liver at the transverse fissure and unite to form the hepatic duct, an inch and a half long, between the layers of the lesser omentum, where the cystic duct joins it at an acute angle to form the common duct. The cystic, the smallest of the three, is an inch and a half long. Its mucous membrane is thrown into a series of crescentic folds, from five to twelve in number; they form a sort of spiral valve. The common duct, the largest, is three inches long, has the diameter of a goose-quill, and is formed by the junction of the two smaller ducts. It descends behind the first part of the duodenum in front of the portal vein; to the right of the hepatic artery, it then runs for a short distance along the right side of the pancreatic duct and passes with it obliquely between the mucous and muscular coats. The two ducts open by a common orifice on the summit of a papilla (papilla of Vater) at the inner side and just below the middle of the descending duodenum.

The pancreatic duct, called the canal of Wirsung, begins near the tail of the organ, runs obliquely downward from left to right, receives

the ducts of the lobules and falls into relation with the common bile-duct. There is occasionally a small accessory pancreatic duct (the duct of Santorini).

Such is a general outline given by text-books. But in this region, as elsewhere, the anatomy is typal rather than typical. Dr. Geo. E. Brewer states that, while the position of the cystic and common ducts is fairly constant, much variation is to be found in the length of each; the cystic may vary from ½ to 2½ inches; the common, from 1½ to 4¾ inches. The duodenal orifice of the common duct averages 12 millimeters. The cystic duct, owing to the spiral valve of mucous membrane, rarely permits the passage of a probe; this is not true of the remaining ducts.

Dr. Brewer has shown that we must look to embryology to explain the existence of a direct canal from pancreas to liver. Early in fetal life a bud projects back into the posterior mesentery; from this the two pancreatic ducts develop. It is usually taught that the smaller Santorini is closed in 90 per cent. of all cases. In truth, however, it is *patent* in about this number. Although this duct usually opens directly into the duodenum, its mouth is frequently found in the common bile-duct. Any obstruction distal to this entrance would force bile into the pancreas. Another interesting path for the bile to this organ is described by E. L. Opie of Baltimore. For a variable distance in the gut-wall the two ducts are separated only by a diaphanous membrane. The cloacoduodenal orifice is much smaller than the opening of either duct, so it is the most frequent lodging-point for stones. The symptoms depend entirely on the size of the stone; a large one blocks all three openings and jaundice results; a small stone stops only the cloacoduodenal ostium and gives rise to the vague chain of symptoms by which we may or may not recognize pancreatitis.

"GRATTEZ UN AMERICAIN ET VOUS TROUVEREZ UN ANGLAIS!"

IT should give the American profession a feeling of self-satisfaction to hear from others words of praise, particularly when they come from the supposedly uncharitable lips of an Englishman. It fills us with wonder that a stranger in a few days' observation could learn more interesting details of our customs, of our institutions, of our manners, good and bad, than we ourselves acquire in a lifetime. Best of all, it thrills us with genuine delight that there should be to-day such spontaneous good fellowship and harmony between British and American physicians as the quaint words above indicate.

The leading article in the *British Medical Journal* for January 25th by Dr. G. B. Ferguson, President of the British Medical Association, entitled "Notes on Some American Hospitals," affords us an interesting vista of ourselves as others see us. Any one who believes that British estimate of our virtues is below par should read this charming and delightfully naïve contribution. Dr. Ferguson is whole-heartedly generous, giving us oftentimes more credit than we may merit, but when he says that the Americans are always pleased to have commendation from a surgeon of the old mother country he speaks truly. There are some passages which are delightfully unique, reminding one of paragraphs from Humbolt's descriptions of aboriginal people. "They dress in canvas boots, linen trousers and coat, all sterilized, and wear a night-cap and long sterilized India rubber gloves. Commonly they take baths before an operation and shower baths after. They make their own laws regarding divorce, for instance; they may, as in the State of Maine, exclude alcoholic beverages. Marriage with the deceased wife's sister is legal —and the States may and do make the most diverse laws regarding medical matters and regulations of health. In New York you are reminded that the fine for spitting in the cars is £100."

In describing the operations seen, the author says, "The temperature was frequently 85° F. and it was necessary for one of the nurses to wipe all the faces at short intervals with a swab; this was done in a friendly way and commonly elicited smiles from both persons. * * * The nurses are treated with much deference and are not called 'nurse.' 'Miss C——, may I trouble you for another ligature?' was the mode in which they were addressed."

"The great characteristic of American hospitals is the worship of asepsis, which I have never seen so consistently and completely carried out anywhere else." His comment on drug dispensing is pleasing. "I was surprised to see how few and simple the drugs and mixtures were. There is none of the radiant polypharmacy which is indeed much more in evidence in Britain than in America. The simplicity and directness of the prescriptions told of strength and knowledge." Some therapeutic gems are as follows: "The bath was the great treatment in typhoid and I was told that any one who would withhold se-

rum might expect an early summons before the magistrate. When I expected much, I received nothing. American ingenuity is tired of splints and is working in the directness of asepsis and ingenious suturing. * * * At the Johns Hopkins, the greatest novelty to me was silver foil for the dressing next the skin. I have brought back with me some of their gloves and this foil and also hemostatic forceps (Halsted's mosquito) for my collegues to make trial of."

Dr. Ferguson was particularly happy over the mode of life of the nurses at the Presbyterian Hospital. "The whole flat roof is used as a 'solarium,' and hammocks, seats and couches were all about. After seven P. M. the roofs belong to the nurses, they play games there and no male person is allowed to be there or even look on. I asked one of the surgeons what they did; he said he did not know, but they enjoyed it very much. * * * The sum of my observations showed me that the Americans are careful and painstaking, rather than quick and showy surgeons. They make more use than most of scissors, both for separating and dividing, and they are really the premier aseptists of the world. They scout the idea of having learnt aseptic principles from the Germans and unanimously give the whole credit of their present arrangements and of their surprising perfection to one man only and to one pioneer hospital alone and the date was five or six years ago and the man's name is McBurney and that hospital is the Roosevelt. * * * My advice to others is to do as I did. A visit to America is in many ways a great eye-opener. Nowhere else have I looked on such a scene as New York by night. See the Americans at home and you will see some of the cleverest men and handsomest women in the world. Be just and friendly and cordial with the men of America and you will find that they are only waiting for an excuse to extend the hand of true and lasting friendship. 'Grattez un Russe,' said Napoleon very rudely, 'et vous trouverez un Tartare!' 'Grattez un Americain,' say I, 'et vous trouverez un Anglais!'"

ECHOES AND NEWS.

NEW YORK.

Hospitals in New York.—A correspondent of the *New York Times* calls attention to the unequal distribution of hospitals on Manhattan Island. He writes: "The Nineteenth Ward of the Borough of Manhattan, it seems, is to have another hospital and dispensary added to its already large number of similar institutions. The Manhattan Maternity Hospital and Dispensary is to be located on the plot of ground made up of 327, 329, 331, and 333 East Sixtieth Street. Of late years this section of our city has become veritably the Mecca of benevolent enterprises in this line, for reasons not easy to explain unless for the convenience of those who foster them. They are also aggregated within comparatively a small area—one bounded only by Fortieth and Eighty-third Streets, Fifth Avenue, and the East River. In this space there are seventeen; all but two have outdoor departments, and three have maternity departments."

All Hospital Patients Vaccinated on Admission.—Dr. Brannan, President of the Board of Trustees of Bellevue and Allied Hospitals, sent to Bellevue last week an order to the effect that all patients received at Bellevue and the allied hospitals should be vaccinated on their admission to the institutions, except cases in which the condition of the patients was very weak.

Milk Producers for Reform.—The Directors of the Five States Milk Producers' organization, in regular session, held at Binghamton, N. Y., February 7th, again declared their willingness to coöperate in all efforts to prevent impure or unfit milk being sold in New York City. They arraigned the present method of the distribution of milk from producer to consumer as responsible for most of the evils complained of, as unbusinesslike and wasteful; as making reform difficult, if not impossible, and as intolerable to both producer and consumer; and invited correspondence and cooperation with health officers and all other parties interested in furnishing pure, whole milk to consumers in New York City.

The Reunion of the New York Profession.—At the recent meeting of the Medical Society of the State of New York, the retiring President, H. L. Elsner, M.D., was made Chairman of a Committee of five to confer with a committee of equal number representing the New York State Medical Association for the purpose of formulating a plan by which the regular profession of the State of New York might be united. Dr. Elsner has selected as his associates on this Committee Dr. Abraham Jacobi of New York, Dr. Albert Vander Veer of Albany, Dr. A. M. Phelps of New York and Dr. George Ryerson Fowler of Brooklyn.

Classification of Pulmonary Tuberculosis.—The following preamble and resolutions were adopted by the New York Academy of Medicine at its meeting held February 6th, and copies were sent by instruction to the Treasury Department, to the Surgeon-General of the Marine Hospital Service and to the Secretary of the New York State Medical Society:

Whereas, The Treasury Department of the United States, upon recommendation of the Surgeon-General of the Marine Hospital Service, has recently decided to classify pulmonary tuberculosis with dangerous contagious diseases, be it

Resolved, That the New York Academy of Medicine deeply deplores this decision, which is not based either on clinical experience or on scientific experiments.

Resolved, That the Academy considers the exclusion of non-pauper tuberculous immigrants and consumptive aliens visiting our shores, unwise, inhumane, and contrary to the dictates of justice. Be it further

Resolved, That, while the Academy is convinced of the communicability of tuberculosis and urges all possible precautions against the spread of the disease occasioned by sputum and tuberculous food, the Academy is opposed to all measures by which needless hardship is imposed upon the consumptive individual, his family, and his physician.

Woman's Hospital.—The Governors of the Woman's Hospital recently sold their old site at Lexington Avenue and Fiftieth Street to the New York

Central Railroad for $400,000. They have now purchased a new location for the Hospital on 109th Street east of Amsterdam Avenue.

Policemen Vaccinated.—On Thursday of this week, by order of Police Commissioner Partridge, all the policemen of Greater New York reported to their respective station-houses and were vaccinated.

PHILADELPHIA.

Contagious Diseases Increase.—During the week ending February 8th there were reported 254 new cases of typhoid fever and 110 cases of smallpox. This is an increase of 53 cases of typhoid and 37 of smallpox over those of the previous week. Compulsory vaccination is still being carried on in many of the lodging-houses of the city. Dr. John V. Shoemaker, President of the Department of Charities and Correction, has recommended to the Department of Public Safety the discontinuance of quarantine for smallpox. He says in part: "In places from which a case of smallpox has been removed I consider sunshine, fumigation, and plenty of fresh air much more effectual as remedies than the close and continuous quarantining of houses. Shutting people up in the house in the minds of many experts is liable to increase rather than decrease the scope of an epidemic." Regarding the report on February 3d of the committee appointed by the Director of Public Safety to determine if proper means were being employed to stamp out smallpox, Dr. Shoemaker, Chairman, says: "Our report stating that the Municipal Hospital is equipped with all approved means of caring for smallpox, that a corps of competent physicians is in attendance and that the patients are well quarantined is founded on personal observation and investigation made by members of the committee." The committee, which includes Drs. Shoemaker, Tyson, Hare, Anders and Henry, also states that the seriousness of the epidemic was not such as to alarm the residents of the city and that adequate precautions in the way of house-to-house vaccination, isolation, quarantine, disinfection, etc., are being taken. Vaccination is again urged as the only thorough remedy.

Druggists to Combine Against "Cut-rate" Stores.—A combination of the independent retail drug-stores of the city is being formed with a capital of $1,000,000. It is the purpose of the trust to acquire all the well-established independent stores, retaining the proprietors as managers at a guaranteed salary and commission, and so fight the larger "cut-rate" establishments. It is reported that more than 100 druggists have already joined the combination.

Domestic Animals Slaughtered to Prevent Spread of Smallpox.—A despatch from Wilkesbarre states that 2,000 dogs and cats are to be killed in Plymouth township. More than 40 cases of smallpox are now being cared for and the Board of Health has decided that the large number of cats and dogs are spreading the disease.

Poem by Dr. Weir Mitchell.—At the celebration of Washington's Birthday by the University of Pennsylvania, Dr. S. Weir Mitchell will read a poem.

Hatfield Prize for 1903.—The Nathan Lewis Hatfield Prize of $500 is to be awarded by the College of Physicians of Philadelphia to the author of the best essay on "The Relation between Chronic Suppurative Processes and Forms of Anemia." Competition is open to members of the medical profession and men of science in the United States. Particulars may be obtained from the Chairman, Dr. J. C. Wilson, College of Physicians, Philadelphia.

Dr. Welch for President of Society.—It is announced that the Philadelphia County Medical Society will present as its candidate for the presidency of the Medical Society of the State of Pennsylvania, Dr. William M. Welch, the well-known authority on contagious diseases.

College of Physicians.—At the meeting of February 5th Dr. D. L. Edsall reported "A Remarkable Case of Coma apparently due to Acid Intoxication *sui generis*." Dr. Edsall prefaced his remarks by a discussion of the various phases of acid intoxication and the accompanying conditions. In one group of cases acetonuria is the only manifestation. In a second group acetonuria is accompanied by diaceturia and perhaps oxybutyric acid. Gastro-intestinal disturbances accompany each but are not marked. There may also be slight urinary evidences of acid intoxication. In a third group there is marked urinary evidence of acid intoxication. The case reported was that of a man previously healthy who was rather suddenly seized with vertigo which was followed by coma. That condition lasted for eleven hours, there being present the symptoms and urinary signs of acid intoxication. Paralysis was not present. A notable feature was the very marked odor of acetone about the patient. Treatment was the intravenous injection of three pints of a two-and-one-half-per-cent. solution of sodium bicarbonate, this being repeated once. Apoplexy, uremia, alcoholism, and diabetic coma were each ruled out as the cause of the coma and the case diagnosed as one of acid intoxication *sui generis*.

Adiposis Dolorosa in a Male.—Dr. F. X. Dercum exhibited this patient, stating that he was the fourth male of the entire 25 cases of the disease reported. Fifteen years ago the man suffered from a febrile attack and soon afterward began to take on deposits of fat. The back, arms and legs and later the sides and abdomen were involved. The fatty areas are very painful to pressure, are easily bruised and ecchymotic areas spontaneously appear. Epilepsy has also appeared as a complication of the case. Dr. Dercum spoke of the pathological findings in one case coming to autopsy. There was found a neuritis, disease of the thyroid gland, and sclerosis of the columns of Goll. Dr. Dercum also exhibited a second patient, a female, in whom the disease was of very slow progress. An examination of the eye-grounds by Dr. de Schweinitz revealed no changes except a circinate retinitis which he states to be in no sense a symptom of any one disease.

A Recent Research on Snake Poisons.—Drs. S. Weir Mitchell and Simon Flexner read papers on this subject, Dr. Mitchell having suggested the experiments and Dr. Flexner conducting them. While not yet completed Dr. Flexner was able to outline some results determined thus far. The research was conducted with a view to interpreting the blood phenomena caused by venoms. Dr. Flexner first gave a brief explanation of the principles of bacteriolysis and hemolysis in general and then detailed the results of their experiments to determine the hemolytic properties of venom. It was found that venous hemolysis takes place to a varying degree as the blood of different animals is susceptible to venom in a varying degree. Venom acts in a maximum way upon one kind of corpuscles. The general conclusions reached were as follows: (1) Venom is a very complex compound and contains a large number of intermediate bodies but no complement. (2) If venom contains a nerve poison, that substance unites chemically with nerve-cells to produce its effect. (3) The rapid decomposition of bodies dead from venom poisoning is due to the action of the venom upon the blood. The serum complement of the blood is fixed by the venom and as a consequence the bacteritic quality is lost. The bacteria thus rapidly multiplying when not inhibited by the serum cause hasty decomposition.

(4) Experiments with antivenin showed it to be a physiological and a chemical antidote to venom.

Brain Tumor Localised by the Roentgen Rays.—An exceedingly interesting communication was that of Drs. Charles K. Mills and G. E. Pfahler. It included the report of a case of brain tumor localized clinically and by the Roentgen rays. The clinical diagnosis of a subcortical tumor mainly in the parietal region and extending to the internal capsule was made. Dr. Pfahler, Assistant Chief Resident Physician at the Philadelphia Hospital, then made skiagraphs of the patient and obtained a shadow which exactly confirmed the clinical localization of the tumor. Operation was followed shortly by death. Autopsy revealed a large fibrosarcoma in the aforementioned location, only a portion of the tumor having been removed at the time of operation. Experiments upon cadavers were then made by Dr. Pfahler, the results being extremely gratifying. Tumors of various sorts were placed within fresh brain substance or brain that had been hardened and after closing the skull skiagraphs were made. The conclusions reached after several series of experiments were as follows: (1) Fibrosarcomata and perhaps other tumors can be photographed in the living subject and their location shown. (2) Other varieties of tumors can be photographed in their most usual locations. (3) Other abnormalities in brain tissue itself can be photographed. This may in certain cases be of value in diagnosing cysts, hemorrhages, etc. (4) The most careful technic and regard for the special conditions in each case must be observed. (5) Shadows obtained in normal portions of the brains studied show that the utmost care in interpreting any shadow obtained is necessary.

Obituary.—Dr. Adam Trau, for many years on the medical staff of the German Hospital, died in that institution February 7th of paralysis. Dr. Trau was born in Germany sixty-two years ago, graduated at the University of Pennsylvania, and, after serving as naval surgeon during the Civil War, practised in this city.

Dr. W. Murray Weidman, of Reading, died of angina pectoris February 7th at the age of sixty-five. Dr. Weidman was the local representative of the State Board of Health, was prominent in local and State medical societies, and was one of the best known physicians in eastern Pennsylvania.

CHICAGO.

Health of Evanston.—According to the health report submitted a few days ago to the Council, Evanston has been healthier during the last year than for any year since 1896. There have been 174 deaths, which, in a population of nearly 20,000, means an average death-rate of 8.65 per thousand. The largest number of deaths was among infants under one year old, and the next among persons between twenty and thirty years of age. There were three deaths of persons over ninety. Tuberculosis had the most victims, with heart disease and pneumonia next. The use of lake water is held largely responsible for the prevalence of typhoid fever. Dr. W. R. Parkes, the Health Officer, discourages the use of artesian water, as the jugs are filled and refilled without thorough washing. As it is impossible to tell from day to day just what the condition of the lake water is, he concludes that absolute safety lies only in boiling the water.

Cook County Hospital Staff.—New officers were elected by members of the attending staff of the Cook County Hospital at its regular annual meeting recently held. Information that an attempt might be made to effect a new interpretation of the rules and allow the old officers to hold over until next year brought about a large attendance. The following officers were nominated and elected: President, Dr. Arthur R. Edwards; Secretary, Dr. L. Blake Baldwin. Dr. Edwards has been on the professional force at the institution for twelve years. He is professor of principles and practice of medicine and clinical medicine in the Northwestern University Medical School. He succeeds Dr. Denslow Lewis. The Executive Committee will be appointed later and it is expected that new rules will be considered and passed regulating the management of the physicians and internes.

New Hospital.—Preparations are being made for the erection of a hospital for the Swedish Mission Association in Lake View. It is said that the hospital will cost about $50,000 when completed.

Coeducation Discussed at Rush Medical College.—The matter of coeducaton was discussed by members of the faculty at a recent meeting in a very vigorous manner and, notwithstanding the opposition of certain members to coeducation, a resolution was adopted recommending the admission of women to all branches of the medical department of the University of Chicago.

High Retraction Ring as a Contraindication to Version.—Dr. Rudolph W. Holmes read a paper on this subject before the Chicago Medical Society, February 5, 1902. He said that the retraction ring as a product of normal and abnormal labor is not given a proper recognition in American text-books; it is considered so unimportant that hardly a paragraph is given to the discussion of the ring, threatened rupture, etc., and its contraindication to version. The reports of two cases are given, occurring in a European clinic, in which version was done with a high retraction ring at the umbilicus; in one case death resulted from rupture of the uterus; the other patient fortunately escaped.

Anatomy of the Retraction Ring.—In the nonpuerperal uterus, and probably up to the moment of labor, the division of the uterus into body and cervix obtains. In labor, however, such is not tenable—here the upper and lower uterine segments are the divisions of the uterus, the former being made up of a part of the uterine body, the latter made up of cervix and that part of the body between the os internum and the retraction ring plus the cervix. Three anatomic factors in late pregnancy may often denote the potential (proximate) site of the future ring—the vein of Bayer, the "line of firm peritoneal adhesion," *i.e.*, the peritoneum of the uterovesical fold passes onto the uterus near the os internum, is loosely attached to the lower uterine segment, and becomes closely adherent near the future site of the ring, and the densely woven structure of the muscle of the upper segment and laminated structure of the lower segment with a considerable excess of connective tissue. The muscular arrangement of the two segments is more evident in advanced labor, and the segments are separated by a distinct rim or ledge—the retraction ring.

Diagnosis of the High Ring.—In every normal labor one should attempt to find the retraction ring. With a slight rise in normal labor it may be difficult or impossible to discover it; but the more one looks for the ring late in normal labor the more likely will he be to find it under physiological conditions and the more positively he will make it out in pathological circumstances. When some obstruction exists the ring will be two or more inches above the pubes—the higher it rises the more will these symptoms be present. First, increased sensitiveness of the lower segment, gradually becoming more marked until actual pain is present in contraction and also in intervals of uterine activity; palpation will bring out this pain. The round ligaments will be large, tender, and much stretched. The ring will be felt as a distinct groove running obliquely across the uterus (abdomen)—as the ring rises in spare women it may be clearly seen. The fetus may be more

clearly outlined in the interval of contractions through the much attenuated lower segment. Examining internally we may find the thin segment bounded at its upper border by a distinct ledge. With these findings, the pulse will be more frequent, temperature raised, and in extreme cases we may have the woman complaining of the impending evil. In a goodly proportion of cases the membranes will have been ruptured for some time. The ring must be differentiated from a full bladder, the success formed by the depressions of the neck being filled by uterine constrictions, lower border of the placenta, and large fibroids of the anterior wall, and in certain cases of twin pregnancies. Each of these will be excluded by a careful consideration of the characteristics peculiar to the several conditions.

Mechanics of the Retraction Ring.—At the beginning of labor the potential site of the ring is behind the pubes. As labor progresses the upper segment contracts and retracts; the lower segment dilates and stretches. In the course of normal labor retraction occurs in almost the same ratio as the child is expelled from the uterus, so the lower segment is only slightly stretched—that is, the ring mounts usually not more than two inches. In obstructed labor retraction of the upper segment goes on more rapidly than expulsion, or expulsion may be impossible from insuperable obstruction; here, as retraction of the upper segment diminishes that part of the uterine cavity as made up by it, there must be a compensatory stretching of the lower segment to give the fetus a uterine covering; this thinning permits the ring to mount to the umbilicus or even above it, the higher the rise of the ring, the more imminent is rupture of the uterus.

Therapeutic Considerations.—With a certain dogmatism one may state that the higher the ring rises with the resultant thinning of the lower segment, the more strictly must one draw one's lines against performing version. Mere elevation of the ring alone cannot be solely one's criterion—one must consider the general condition of the uterus at the moment of the tentative attempt. A high ring with intact membranes at the moment of operation will offer better results than a lower ring with membranes ruptured for a protracted period. When in doubt of the advisability of performing version prepare for the operation, pass the hand into the lower segment—if the fetus is tightly grasped by the uterus, if the segment is very thin, and the ring high, alter the plans and try tentatively the axis traction forceps. If they fail after ten tractions remove the instrument and perform craniotomy. If the child be dead perform craniotomy as the operation of election. Do not perform version on a dead baby long after the membranes are ruptured. In transverse cases perform decapitation or embryotomy as the case indicates. Decide each case on its merits and give the mother the most certain procedure; the baby is usually dying or dead so should have little consideration beside the welfare of the mother.

Exophthalmic Goiter.—Dr. Edward F. Wells read a paper with this title. After alluding to the interesting history of the affection, he spoke of the causation. The essential cause was unknown, but the symptoms are clearly due to an excessive or perverted action of the thyroid gland, a true hyperthyroidism. This seems conclusively proven from the facts, that there are evidences of excessive activity of the thyroid gland, and that similar symptoms may be and often have been produced by excessive thyroid feeding; and also because myxedema, which is the exact opposite pathologically and symptomatically of exophthalmic goiter, is clearly due to a thyroid insufficiency and is relieved by the proper exhibition of thyroid extract. The symptomatology of exophthalmic goiter in typical cases is clearly cut and pathognomonic and even in atypical cases is sufficiently distinctive to almost always allow of a correct diagnosis. The prognosis varies remarkably in the different cases. Death occurs in about 12 per cent. of the cases, but this mortality appears almost exclusively in those cases which have a rapid development of severe symptoms, especially acute nervous and mental symptoms. The ordinary case does not usually die from the effect of the disease, but the course is prolonged usually for many years, and is marked by relapses and recovery is not perfect, that is, more or less nervousness and thyroid enlargement remain permanent. Thyroid atrophy, with consequent myxedema, is a sequel in some few cases. After mentioning the ordinary measures of régime, diet, etc., attention was called particularly to a few therapeutic measures, each of which produces a definite effect and which has appeared useful in the treatment of this disease, according to the experience and observation of the speaker. Of these codein was placed at the head of the list. This agent may be given in doses ranging from one-quarter to one grain, three or four times a day and continued for many weeks or months, preferably with occasional intermissions for a few days. Codein is a most useful agent in relieving the nervous and mental excitement which is usually present, but it appears to have an effect beyond this, inasmuch as its use is usually followed by gradual slowing of the pulse and improvement in the gastro-intestinal symptoms. Adrenalin hydrochlorate, in the standard solution of 1-1000, may be prescribed in doses of from five to ten drops three times a day, and this will be followed by an evident toning up of the paretic capillaries. Digitalis or strophanthus may also be used. The removal of a portion of the enlarged thyroid, or ligation of the thyroid arteries, is the only therapeutic measure which approaches the disease directly. Partial thyroidectomy is a dangerous operation and is often followed unexpectedly by death in a few hours or days. It should therefore be reserved for the most rebellious or severe cases in which these extraordinary risks may be assumed in the presence of extraordinary dangers.

CANADA.

Winnipeg Vital Statistics.—During the month of January there were registered in Winnipeg 97 births, 55 males and 42 females; deaths, males 30 and females 13; marriages 54.

Donation of Books to the Ontario Medical Library.—Dr. Howard A. Kelly has made a handsome donation of books selected by Dr. N. A. Powell, curator of the O. M. L. A., from the books of the late Dr. Sweetman. It is understood that the cost of these was in the neighborhood of $1,200.

Toronto Nursing-at-Home Mission.—During the past year this institution has looked after 841 patients and the nurses have made 5,406 visits. The receipts for 1901 amounted to $1,365.79 and the disbursements were $1,241.69. The sum of $1,189.20 has already been subscribed toward the building fund of a new home.

Smallpox in the Province of Quebec.—Dr. Elzear Pelletier, Secretary of the Provincial Board of Health, has handed out a statement showing that during the year 1901 there were 5,069 cases of smallpox in that Province. The cases occurred in 276 localities in 55 out of 73 counties in the Province. The percentage of deaths, however, was very small, being about one per cent. Three hundred and twenty-four municipalities have reported to the Board that they have adopted the vaccination by-law recommended to them by the Board of Health.

New Hospital Opened.—The Chipman Memorial Hospital was opened at St. Stephen's, New Brunswick, on the afternoon of February 4th by the Hon. L. J.

Tweedie, Premier of the Province. The hospital is finely situated on the banks of the St. Croix River just below the town and was formerly the Chipman homestead. The building and grounds, fully equipped with all modern appliances, has been donated to the town by Lady Tilley and other heirs of the Chipman estate. It has accommodation for twenty patients and on the day it was opened the men of St. Stephen's made it a contribution of $1,000.

Toronto Hospitals Crowded.—St. Michael's Hospital, Toronto, and the General Hospital, same city, are full to overflowing, the former being so congested that the corridors have been pressed into service and for the present no new admissions are being made. There are at present in the Toronto General Hospital 325 patients, the greatest number in residence at one time in its history. This hospital has the greatest number of beds of any hospital in Canada, having accommodation for 400. The large majority of the cases are surgical and operative, the medical wards being far from full. Grace Hospital has just completed one of the finest operating theaters on the continent at a cost of $10,000, the gift of Lieutenant-Colonel Pellatt.

Protestant Hospital for Insane, Quebec.—The annual meeting of the Board of Governors of this institution was held last week, when the superintendent, Dr. Burgess, made an important proposal to the effect that he be allowed in future to accept any applications for voluntary admission to the hospital that might be made to him, without conforming to the Government requirements regarding admission to the institution. This would make the institution a hospital in every sense of the word. The annual report contained the following statistics: In residence, January 1, 1901, 192 men and 176 women, total, 368. Admitted during the year, 86 men and 64 women. Discharged as recovered, 25 men and 20 women; discharged as improved, 8 men and 8 women; discharged as unimproved, 3 men and 6 women. Died during the year 24 men and 11 women. Remaining in residence at the close of the year, 217 men and 194 women, total, 411.

Proposed Consulting Board of Health in Montreal.—Owing to the fact that the Hygienic Committee of Montreal is generally made up each year of members of the City Council who are not conversant with health matters, Alderman Ames, who has always taken a deep interest in the health of the city, proposes a consulting board to consist of four of the city physicians and a practical plumber. It is thought that in this way something could be done to curtail the three thousand odd unnecessary funerals taking place in Canada's great commercial metropolis each year.

Doctors will Decide an Interesting Legal Point.—A medicolegal case of interest is before the courts in Montreal. A clergyman recently died in that city leaving an estate of $95,000, which he had inherited from his first wife. Shortly after his demise, his widow gave birth to a child, a son, who died about six hours after his birth. The little child had been baptized before its death, but it is on its viability that the case hinges. If he was born viable, he became his father's heir. The other heirs of the estate claim that the child was not born viable and the medical testimony is awaited with considerable interest.

The Tuberculin Test.—At the annual meeting of the Shorthorn Breeders' Association, held in Toronto on the 4th inst., the following report of a special committee was adopted: "We, the members of the Dominion Shorthorn Breeders' Association, at our annual meeting, resolve that the tuberculin test is unreliable, unnecessary, and in many cases injurious, and that we urge the discontinuance of the compulsory use of tuberculin by the Dominion Government Department of Agriculture; and we also fail to see the object now of ninety days' quarantine, as there is no contagious disease in Great Britain requiring its enforcement for such a length of time."

Annual Meeting of the American Medico-Psychological Association at Montreal.—This Association will hold its annual meeting, the fifty-eighth, in Montreal on June 17th, 18th, 19th and 20th; the Windsor Hotel will be the headquarters of the Association. The annual address will be delivered by Dr. Wyatt Johnston of McGill University, the subject will be "The Medico-legal Appreciation of Trauma in Its Relations to Abnormal Mental Conditions." Amongst other Canadians who will contribute papers are Dr. Daniel Clark of the Toronto Asylum, Dr. Russell of the Hamilton Asylum and Dr. R. M. Bucke of the London Asylum.

GENERAL.

Eddyism and the Kaiser.—The last addition to the 476 varieties of quackery said to thrive in Berlin is Christian Science. It is the sensation of the moment. The comic papers caricature it, the weighty religious periodicals marshal polemics against it, and the daily press prints much descriptive matter regarding what is called "the latest American importation," saying it was only brought over after it had been "worn out in the United States." The German followers of the American Christian Science community in Berlin number about 200 persons. Emperor William is so incensed at the Spiritualist movement that he has issued a notification, through the "North German Gazette," that all persons in any way connected with Spiritualists, faith healers, Christian Scientists, or kindred cults will hereafter be rigidly excluded from the imperial Court. The Emperor expressed strong disapprobation of prayer healing, but agreed that Herr von Windheim, the Police President, must make no martyrs.

Smallpox Threatens Coronation.—With the increase in the number of cases of smallpox, London's population is flocking to insurance offices in order to get insured against the epidemic. All classes are taking advantage of the underwriters' charge for vaccinated and unvaccinated risks, though for the East End districts the premium is as high as 21 shillings. Some financial men have been insured for as much as 7,000 pounds against the risk of catching smallpox, but the average policy is about 500 pounds. It is feared that May or June will be the worst month of the epidemic. If this is true, it is a serious menace to the success of the coronation festivities.

An Antivaccinationist Convinced.—The Boston Board of Health last Saturday announced that Dr. Immanuel Pfeiffer was ill with smallpox in its worst form at his home in Bedford, and probably could not live. Dr. Pfeiffer was one of the strongest opponents of vaccination in Massachusetts, and recently appeared before the Legislative Committee to urge repeal of the compulsory vaccination law. Having the courage of his convictions, he went to Galloupes Island and completely exposed himself to smallpox with the above results.

Victims of Russian Railroads.—A recent report of the Russian Minister of Ways of Communication shows that in 1899 there were 4,447 accidents, or an average of a little more than 12 per diem. In all, 1,226 persons were killed and 6,933 injured.

British War Scandals.—It is understood that a contract for meat was first resold at £10,000 premium, and then at £40,000, while Cecil Rhodes and the De Beers group handed over £200,000, and thus finally secured the privilege of supplying the troops in South Africa with fresh meat. These figures are likely to add

fuel to the fire of public indignation which threatens to center around the British Secretary for War. Truly blood is thicker than water. It now appears that the embalmed-beef episode of our Spanish-American war need not be regarded as the result of unbridled avarice running riot in a young nation that lacked the moral restrains of long established civilization. It may have been only the outcroping of a family trait.

Banquet in Honor of Dr. Gregory.—The medical profession of St. Louis, under the auspices of the St. Louis Medical Society, will give a testimonial banquet to Dr. E. H. Gregory, who for fifty years has been an active teacher of medicine. The banquet will be held at the Planters House the early part of April. A large number of guests will be invited, including all the ex-presidents of the American Medical Association out of compliment to Dr. Gregory who was president of the Association in 1887. A Committee composed of Drs. F. J. Lutz, N. B. Carson, J. P. Bryson, C. H. Hughes, W. B. Outten and H. W. Loeb has the matter in charge.

American Hospital in Paris.—There is to be built in Paris an American hospital, where all citizens of the United States will find in case of illness careful medical and surgical attention free of any charge. Funds for the purchase of land, for the erection of buildings, for the complete fitting up of a model modern hospital and for the endowment of the same are available. In fact, the land has already been bought, and for several months American architects have been working on the plans.

Severed Twins.—On Monday last Professor Doyen of Paris did an operation upon the Hindoo twins who were united after the manner of the famous Siamese twins. The little patients were under chloroform for about twenty minutes and the operation was a success, although their condition is not promising, owing to previous tuberculous infection.

The Hugo Prize.—This prize, amounting to one thousand francs, for the best work upon a subject pertaining to the history of medicine, written in the French language within the past five years, has been awarded by the Paris Academy of Medicine to Dr. Mélanie Lipinska of Warsaw for her work entitled "History of Women Physicians from the Middle Ages to the Present Time." With the prize is conferred the title Laureate of the Academy of Medicine.

The Red Cross Society.—The Seventh International Conference of the Red Cross Society will take place at St. Petersburg in May, 1902.

Annual Meeting.—The eighth regular annual meeting of the American Laryngological, Rhinological and Otological Society will be held in Washington, D. C., June 2, 3 and 4, 1902.

Obituary.—Dr. W. Murray Weidman, one of the most eminent physicians of Reading, Penn., died suddenly of heart disease on February 8th, aged sixty-five years. He was at one time President of the Pennsylvania Medical Society, and was associated with all the leading medical fraternities in the country. He served through the Civil War.

Dr. Alonzo Boothy, a widely-known physician and gynecologist of Boston, died suddenly of heart disease on Saturday, February 8th.

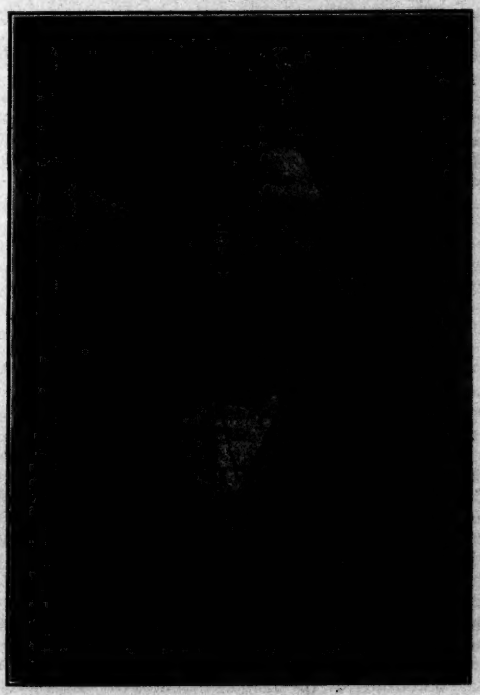
Dr. James Hine, died February 11th at New Milford, Conn. Dr. Hine had been ill for a month, the result of injuries received from a fall. He was born in New Milford seventy-nine years ago and had lived there all his life. He was educated at the University of Burlington, Vt., and afterward at New York University, whence he was graduated with the degree of doctor of medicine. This profession he practised until his retirement some years ago.

OBITUARY.

PAUL F. MUNDÉ, M.D., LL.D.

Dr. Paul F. Mundé died at his home, New York City, on the evening of February 7th, after an illness which has been serious for two months. During the last few weeks he suffered greatly, his ailment being an affection of the heart which has troubled him for ten years.

Dr. Mundé was a native of Dresden, Saxony. His father was Charles Mundé, and his mother Bertha, daughter of Baron von Hornemann, Counsellor of the King of Saxony. Implication in the Dresden uprising of 1849 forced the father to leave Saxony. The boy, Paul, began his education at the Boston Latin School, and entered Yale Medical School in 1863. He became a medical cadet in the Union Army in 1864, and after six



months of service in the field entered Harvard Medical School, from which he was graduated in 1866. The same year he went to Germany and served as volunteer assistant surgeon in the Bavarian army during the war of 1866.

Once more mustered out of the active service the young surgeon, just turning his majority, found at Würzburg the influence that was to shape his life's work—Professor Scanzoni, with whom he remained until 1870, acting as assistant to that remarkable gynecologist. The outbreak of the Franco-Prussian war drew him for the second time into the Bavarian army. He was a battalion surgeon, with the rank of first lieutenant, when the Emperor William bestowed upon him the Iron Cross for heroism in rescuing patients from a burning hospital in Paris.

Receiving the degree of Master of Obstetrics at Vienna in 1871, Dr. Mundé spent the next two years at various European hospitals, including those of Heidelberg, Berlin, London, Edinburgh, and Paris. In 1873 he came to New York, where he resided until his death.

From 1874 to 1892, Dr. Mundé was editor of "The American Journal of Obstetrics," raising the magazine to a position of preeminence in that specialty. He was one of the founders of the American Gynecological Society, becoming vice-president in 1884, and president in 1898. He was president of the New York Obstetrical Society from 1886 to 1888, and in 1887 was elected vice-president of the British Gynecological Society. He was a member of the German Gynecological Society, a corresponding Fellow of the Obstetrical Societies of Philadelphia, Leipsic, and Edinburgh, and honorary president of the International Congress of Obstetricians and Gynecologists. He was a member of the Medical Society of the County of New York, and a Fellow of the New York Academy of Medicine. In 1897 Dartmouth conferred on him the degree of LL.D.

At the time of his death Dr. Mundé was gynecologist to the Mt. Sinai Hospital, Consulting Gynecologist to the Skin and Cancer Hospital, and Consulting Obstetrician to the City Maternity Hospital. He was a member of the Union League, Riding, and South Side Sportsman's Club.

Dr. Mundé was the author of several authoritative works, among the best known being "Minor Surgical Gynecology" and "A Practical Treatise on the Diseases of Women," and he published more than one hundred contributions to current medical literature.

CORRESPONDENCE.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, February 1, 1902.

THE LIGHT THAT FAILS—THE "THOROUGH" SYSTEM IN CANCER—ELECTRICITY IN THE TREATMENT OF CANCER—THE ROYAL ARMY MEDICAL CORPS IN SOUTH AFRICA—THE ARMY NURSING SERVICE.

THE light treatment of lupus and other skin affections which was introduced into this country from Copenhagen only two or three years ago has already *implanted* itself firmly, as far as apparatus is concerned, in many of our large hospitals. In London the real pioneer was Mr. Malcolm Morris, although the London Hospital, which numbers among its managers a man who has a highly cultivated instinct for advertisement, has contrived to get for itself whatever credit may be due to priority in this particular field. If there is any one within the limits of the three kingdoms who has not heard of the lamps presented to the London Hospital by Queen Alexandra and of the interest taken by that gracious lady in the patients for whose treatment they are intended, the fault does not lie with the authorities of the Hospital. The Queen being herself a Dane, and having also, be it whispered, experienced in her own royal person a little of the disfiguring handiwork of the tubercle bacillus, is naturally interested in the treatment, and the London Hospital people have worked that interest for all it is worth. They have publicly stated that they have patients waiting their turn who have no chance of being taken in hand for two years. As to their results with the light little has yet been heard, though the public is skilfully given to understand that they are marvelous. Dr. Sequeira, who is in charge of the department has, however, reported some promising work with the X-rays in cases of rodent ulcer. Mr. Malcolm Morris and others brought their results with light and the Roentgen rays before the last annual meeting of the British Medical Association, and on the whole as far as they went they were encouraging. But it is noteworthy that our British workers did not speak of either method with the confidence of the Copenhagen and Vienna physicians. Except in cases of very superficial disease affecting a limited area in easily accessible regions anything like a complete cure was practically unknown, though the improvement was very striking. Now the first enthusiasm always aroused by a new method of treatment is beginning to pass away, and the men who are ripest in judgment and experience show a disposition to hint a doubt if not to hesitate dislike. The cases of "cure" are relapsing and the "improvement" is disappearing. Even the X-rays, from which better things were hoped, are not fulfilling the promise of their early trials. The situation reminds one somewhat uncomfortably of the tuberculin "fizzle." It is difficult, however, to believe that therapeutic methods of such undoubted activity are incapable of producing a permanent effect. No echo of discouragement comes from Copenhagen, and there is still room for hope that the methods for some reason have not yet had fair play in this country. It should be said, however, that there appears to be no enthusiasm about the light treatment in Germany. This, of course, may be explained by the well-known unwillingness of our Teutonic friends to find good in anything that comes out of the Nazareth of a foreign nation. But on the other hand the results of the treatment have apparently not been particularly brilliant in France. Obviously the safest attitude of mind in regard to the whole question at present is one of expectancy.

The cancer question is agitating men's minds here in various directions. The money required to carry out the scheme of organized research to which reference was made in a previous letter is not yet forthcoming. The promoters thought they had caught their millionaire, but when he was thought to be ready to submit to the necessary depletion, he suddenly flung himself loose from the Sangredos who were preparing to bleed him. It is supposed that the refusal of the King to lend his ample countenance to the scheme inhibited the impulse to which the stimulus of the promoters eloquence had given rise. It is said that there are plenty of wealthy men who are ready to make up the amount needed, but there are signs of the usual jealousies arising among the promoters. Every one wants to play the part of high almoner of the philanthropists' bounty so as to show people that, if he is not the rose, he has lived near it and caught some of its fragrance.

The medical officers of our Army in South Africa are beginning to grumble, or, as the soldiers say "grouse," at their prolonged service in the field. The strain of work is beginning to tell seriously on many of them. It shows itself in nervous breakdown and cardiac disorder. But unless a man is utterly unfit for work he has to stay at his post, for there is no one to relieve him. The Service is grievously undermanned and already every available man is serving in South Africa. The War Office makes no effort to fill up the rapidly increasing vacancies and there is inexplicable delay in promulgating the Warrant making the new scheme, of which I sent you an outline in October, operative. There are said to be nearly 200 medical officers who have earned the right to retire, but who, owing to the exigencies of the service are not allowed to do so. The situation is very serious, and no way out of it is apparent unless the Government can manage to get men to enter the Service, or employs civilian surgeons. The latter have, however, proved so unsatisfactory owing to their distaste for discipline that Lord Kitchener has, it is said, protested strongly against more of them being sent out. He insists on

having officers of the Royal Army Medical Corps. But none are to be had and the War Office is finding that its system of deliberate unfairness toward the Army Medical Service is bearing bitter fruit.

In connection with the Army, it may be mentioned that the new nursing service has been accepted with very little unfavorable criticism. This may be due to the ignorance which except among a handful of experts prevails on the subject. The "experts" who drew it up came to the subject with absolutely unbiased minds, for with one exception not one of them had any ideas on the matter at all. The Queen took a great interest in the scheme and both Her Majesty and Lady Roberts showed a disposition to take an inconveniently active part in the organization of the service. Dr. Johnson asked if a patron was not one who encumbered with help a person able to look after himself. The "Committee of Experts" found that the same definition may be applied to royal patronesses. Among other things it was suggested to them that the service should be called after Queen Alexandra. It speaks well for the independent spirit in which they did their work that they successfully resisted the blandishments of their exalted helpers.

A NOBLE LIFE.

To the Editor of the MEDICAL NEWS:

DEAR SIR: I feel that something more ought to be said of the life and character of the late Dr. J. T. Eskridge than will be said in the ordinary formal announcements of his death.

There are few American physicians who have done better clinical work than he, or who have written as much as he of what will have permanent value, or as nearly permanent as medical progress admits of. His recent contribution to the subject of pulse, temperature and respiration in brain disease was an elaborate, painstaking, highly valuable piece of work, and, so far as I know, surpassed any work of the kind that has been done anywhere. He had a rare faculty for exact and methodical observation, and as rare a faculty for clear and simple statement.

In addition to his professional attainments and intellectual qualities, which were of a high order, he was a man of the finest character, simple, unpretentious and sincere, gentle mannered, dignified and manly. For many years he had been on the borderland of invalidism, but in spite of this he worked as few do; he knew that he had two diseases either of which was necessarily fatal, and yet he went quietly on, cheerfully and without complaint, with a quiet courage that was worthy of a better fate.

The career of Eskridge is a fine example to others, for lives like his are the best sources of character. Such a man, though he may be only a humble doctor, is no less than a missionary and philanthropist, relieving the world's suffering, moralizing and elevating men, making them better and happier, and thereby hastening the day of universal good. J. H. MCBRIDE.

Los Angeles, Cal., Jan. 23, 1902.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

DISSEMINATED SCLEROSIS—HEMICHOREA AND PAROTITIS IN DIABETES—HEMOPERICARDIUM AS A CAUSE OF SUDDEN DEATH—INFLUENCE OF SOIL UPON COMMUNITY HEALTH—HEMIPLEGIA AND THROMBOSIS—EPIDEMIC DIARRHEA IN INFANTS—THE BOILING OF MILK—MICRO-ORGANISMS AND RHEUMATISM.

VARIOUS matters of high scientific importance were presented before the British societies during December. Among these the following are the most worthy of note:

J. M. FINNY, at the Royal Academy of Medicine in Ireland, December 13, 1901, exhibited a twenty-two-year-old girl with the typical symptoms of disseminated sclerosis. At the age of eighteen years she became completely paralyzed in the arms, legs, bladder and rectum, and suffered from large bed sores over the sacrum and buttocks. No cause for her illness could be found. For fifteen months she was a patient in County Roscommon Infirmary under the care of E. T. Blakeney. She left the institution so far recovered as to be in much the same state as that in which she was presented. The author called attention to the rarity and peculiarity of the disease and commented on the variability of its course and the difficulties produced in diagnosis owing to this variability in its early stage. He then pointed out that the signs were typically apparent in this patient, taking them in order of their prominence. These signs were complacency as to her sad lot and cheerfulness and contentment as to her surroundings. Gowers lays stress on this feature as characteristic of disseminated sclerosis, more commonly met with in females. A differential diagnosis must be made between this disease and others which in some particular feature resemble it. Such diseases are paralysis agitans, general paralysis, mercurial tremors, ataxic paraplegia, intracranial tumors, especially of the cerebellum, transverse myelitis, and, although the subject of diagnosis was not entered on or discussed, a warning was uttered as to the risk of confounding it with hysteria. This risk is present not when all the typical symptoms occur, as in Dr. Finny's case, but when they are ill-defined and varied in extent and gravity under the influence of time.

G. J. PEACOCKE read a paper on hemichorea and parotitis complicating diabetes. The patient was a sixty-four-year-old man admitted to the Adelaide Hospital April 29, 1901, suffering from diabetes with the usual symptoms, emaciation, thirst, and polyuria. The quantity of urine passed in twenty-four hours varied from three to five pints and quantitive analyses gave 2.7 ounces of sugar on May 7th, with some smaller quantities on subsequent occasions. Somnolence, which at times approached coma, continued throughout illness. He died May 28th, four weeks after admission. On May 4th he developed left-sided hemichorea, which resisted hyoscine, bromides and chloral. Arsenic in 10-minim and trional in 20-grain doses were given. These caused rapid improvement and disappearance of the chorea on May 13th. The second complication, parotitis, appeared May 11th, at first with little trouble, but on May 16th there were elevation of temperature and enlargement and tenderness of the parotid gland. The fever then continued until the patient's death, but never was higher than 101.6 Fahr. The cause of the parotitis was obscure. Similar conditions have been described in a variety of diseases and injuries of the abdominal organs, but thus far never in connection with diabetes.

J. BURGESS gave a few notes on an uncommon case of sudden death in which the cause seemed to be acute capillary hemorrhage into the pericardium. The patient was a poorly-nourished laborer, thirty-five years old, out of employment. He did not complain of being unwell until the fatal seizure came on. Presumably while seeking employment he was noticed to fall suddenly with his shoulder against a wall and then to drop to the ground. All efforts to revive him failed and when the ambulance arrived he was dead and was taken in it to the morgue instead of to the hospital. While poorly-nourished he was not emaciated. Both

lungs were emphysematous with a large amount of muco-pus in the bronchi, but without signs of consolidation or cicatrices. The pericardium was distended with over a pint of fluid blood containing clots. Both ventricles of the heart, especially on the right side, were covered with recent lymph, which at the time could be easily detected and presented a fluffy appearance. Before removing the heart search was diligently but unsuccessfully made for the source of the bleeding. On opening the heart the valves were found normal. The entire front wall of the right ventricle was affected with almost total absence of muscle fiber. The left ventricle was nearly normal, both coronary arteries were permeable. In the right ventricle was a clot formed at the time of death. Both auricles presented nothing abnormal. Although no source of hemorrhage was discovered the blood itself no doubt paralyzed the heart and caused instant death. Evidently during an attack of acute pericarditis, associated with a previously diseased heart, a bleeding occurred sufficient, although small in amount, to cause the paralysis. The usual causes set down for hemopericardium are most commonly rupture of the left ventricle, of an aneurism or of some blood-vessel into its sac, and uncommonly the accumulation of serum or blood during the course of a cancerous or tuberculous pericarditis, or of scurvy and purpura. In this case none of these causes was present except the acute pericarditis. The hemorrhage appeared to have come from the small capillaries involved in the inflammation.

S. D. CLIPPINGDALE, at the British Balneological and Climatological Society, December 18th, read a paper on the clay and gravel soils of London and the relative advantages of dwelling upon them. He gave illustrations of his paper by a geological map of London, and by diagrams of sections of the Thames basin, showing that the soil nearest the river bed was invariably gravel, while that of the districts farther away was clay. Tables were presented giving height, elevation, character of soil, density of population and death-rate of every sanitary area of London. These statistics, Dr. Clippingdale contended, proved that living on clay was not so injurious to health as was commonly supposed, and that, as all the hills around London were of clay, they resemble a clay double basin which, if turned upset down, would become immediately drained of water. The high mortality was clearly shown by the tables to be connected with the low-lying and level districts, where the soil was generally gravel. Density, class and occupation of the population were acknowledged to be important features in determining the death-rate, but did not fully account for the great difference between the mortality upon the clay hills and that upon the gravel levels. The omission from the returns of statistics of the Registrar-General with regard to rheumatism was regretted, as this disease was well known to be influenced by the soil. In conclusion Dr. Clippingdale pointed out that the important thing was to live upon a hill; if a hill of gravel could be found all the better. There are none such in or near London, but he felt that his statistics showed that the clay hills were more healthful than the gravel levels nearer the river.

H. HANDFORD, at the Nottingham Medico-Chirurgical Society, December 18, 1901, narrated the history of a case of right hemiplegia due to thrombosis of the cerebral veins. It occurred in a woman, twenty-five years old, three weeks after the removal of a double pyosalpinx. Death occurred three days after the beginning of the symptoms of thrombosis. At the autopsy a formed, old, gray adherent clot was found in the superior longitudinal sinus and hard, new, black clots were found in the left cerebral veins. There were no clots in the arteries, no hemorrhage into the substance of the brain, and no excess of fluid in the subarachnoid space. The fact that the walls of the superior longitudinal sinus are so fixed that alterations of its caliber did not occur as in other veins, that the veins took an ascending course and that the blood-current in them was exceedingly slow, all favored the formation of a clot in that position, and when in addition the cerebral veins were involved the condition was usually fatal.

A. FULTON read a short paper on the treatment of epidemic diarrhea in infants, advocating the clearing out of the intestinal canal, the withholding of all food for a short time, and then the giving of small quantities of the white of egg beaten up with an equal quantity of water until convalescence set in. Very small doses of tincture of opium and of acetate of lead are useful in certain cases. The preventative treatment is the sterilization of milk during an epidemic.

W. B. RAMSON read a communication on the question, Should milk be boiled? His points were the ease with which milk becomes a vehicle of disease, although it may come from a healthy cow. It is frequently poisoned by dirt from the milker's hands, by manure from the stable in which the cows are milked, and by dust of all kinds which, floating in the air, settles on the exposed surface. The last accident must occur during its transportation and while standing for hours awaiting sale and consumption. It has been shown repeatedly that many zymotic diseases are traceable to the use of unboiled milk, that ten minutes' boiling will destroy hurtful bacilli, and that the value of the boiled milk as a food is equal to the value of raw milk. The author further advocated the distribution of sterilized milk by the city authorities during an epidemic of diarrhea.

F. J. POYNTEN and A. PAYNE presented a paper on the results of an experimental inoculation with a diplococcus isolated after death from the knee-joint of a man, sixty-seven years old, who had suffered from chronic arthritis. Carbolic acid had been the accidental cause of death. Several joints were found to be much damaged by the arthritis with the changes of the nature usually found associated with rheumatoid arthritis in later life. Thus, the fluid in the joint was clear and scanty and contained a small foreign body, probably consisting of organized inflammatory exudate. The cartilages were eroded and the bones eburnated. The synovial membrane was much thickened. A diplococcus was demonstrated in the unincubated and incubated synovial membrane, was isolated and grown on blood, injected intravenously into two rabbits, developing in both arthritis without valvulitis or suppuration in the viscera. One rabbit was killed on the fifteenth day. No erosion of the cartilage or alteration in the bones forming the joints was found. The other animal developed an arthritis of the right knee alone, with a wasting of the muscles of the thigh and of the leg. The animal was killed in the tenth week. The exudation into the joint was scanty, clear and sterile. The cartilages were ulcerated in some places and in others had lost their gloss. The articular surfaces of the bones were slightly flattened in places, ulcerated and their edges thickened and lipped. The muscular atrophy was quite definite. The joint capsule and the tissues about the joint were only a little thickened, but the crucial ligaments were opaque and swollen. A condition of osteo-arthritis had resulted from the intravenous inoculation of a diplococcus isolated from a case of rheumatoid arthritis. The authors pointed out that other investigators have succeeded in much the same way and emphasized the fact that the monarticular inflammation in their experiment was the result of an inoculation into the veins and not of a direct injec-

tion into the joint. They summarized their conclusions as follows: (1) A diplococcus was present in the synovial membrane of the knee-joint of a sixty-seven-year-old man. Several of his other joints showed the chronic destructive changes of one type of rheumatoid arthritis. (2) This diplococcus had been isolated and cultivated. (3) Intravenous inoculation into rabbits had upon two occasions produced arthritis without cardiac lesions. (4) The organism had been isolated from the joint exudations. (5) In one instance an osteo-arthritis, which was non-suppurative, had resulted. This special form of arthritis the authors have not previously observed in animals inoculated with the diplococcus of rheumatic fever. (6) They consider this diplococcus to be the cause of the arthritis both in the man, from which it was isolated, and in the rabbit. Cultures of this diplococcus and sections showing it *in situ* in uninoculated and inoculated fragments of the synovial membrane were shown. The diplococcus rheumaticus was also demonstrated in the synovial membrane from a case of early rheumatic arthritis. Specimens, changes within joints, and tubes containing fluid from such joints were also shown.

SOCIETY PROCEEDINGS.

SOCIETY OF ALUMNI OF BELLEVUE HOSPITAL.

Stated Meeting, Held November 6, 1901.

The President, Alexander Lambert, M.D., in the Chair.

Case of Phlegmonous Gastritis.—Dr. Alexander Lambert said that last summer a case of phlegmonous gastritis occurred in Bellevue Hospital. The patient was a longshoreman who had developed an acute mania and had gone into a stranger's room and made a scene. He had been roughly handled for his intrusion, and had then been brought to Bellevue Hospital. He was a marked alcoholic. On the fourth day he had refused his food in the evening and had been more or less nauseated. The next day he had insisted upon getting out of bed, although much weaker. On going to bed subsequently he had complained of pain around his abdomen. According to the records there had been no rise of temperature above 99° F., and the pulse had not been specially accelerated. Thirty-six hours after his first vomiting there had occurred frequent attacks of vomiting and his pulse had become suddenly very rapid. He died a few hours later at 5 a.m. At the autopsy no peritonitis could be found anywhere. The stomach weighed half a pound and the wall of this organ was half an inch in thickness, and felt boggy. Microscopic sections showed the case to be one of phlegmonous gastritis. The mucous membrane of the stomach was intact, as was also the peritoneal coat, but the submucosa between the mucous membrane and the muscularis showed an enormous number of small round cells pushing the mucous membrane and the muscularis apart. By differential staining the picture presented resembled one of erysipelas of the submucosa. The speaker said that 85 cases of phlegmonous gastritis had been reported in literature, and in half of them there had been peritonitis. As a rule, the temperature had been irregular and the pulse had not borne any close relation to the temperature. Chevosteck in Vienna and Janeway of New York had made a provisional diagnosis during life, and this diagnosis had been confirmed at autopsy, but no one had ever positively diagnosticated phlegmonous gastritis during life. These cases were interesting because of the utter lack of clinical data by which a positive diagnosis could be made. Microscopical specimens were presented.

Malignant Endocarditis with Interesting Features.—Dr. Lambert also reported this case. Clinically it had been a case of acute articular rheumatism complicated with endocarditis, which, so far as the clinical symptoms were concerned, had been of the malignant type. So far as the bacteriological examination, blood-count and the postmortem findings were concerned, it was not a malignant endocarditis, but simple, acute rheumatic endocarditis. The patient was a laborer, twenty-six years of age, with a family history practically negative. Twelve days previous to admission he had suffered from pain in the wrists and forearm and on admission there were headache, fever and swollen wrists and ankles. He was very apathetic and intensely anemic. The physical examination had shown a bronchitis, a heart of normal size and position with a forcible apex beat. There were no murmurs. The second pulmonic sound was, however, distinctly accentuated. Twenty-four hours after admission a faint blowing murmur had been audible at the apex and by the next day this murmur had been louder and transmitted to the axilla. During the next two weeks the bronchitis had cleared up although the anemia had increased and the patient had become more apathetic. At this time, on January 21st, a macular eruption had developed on the arms, neck, trunk and penis—apparently a rheumatic purpura. This eruption had disappeared in five days. A week after this the cardiac murmur had become very harsh and blowing and was transmitted to the back with a marked accentuation of the pulmonic sound. A few days later his mind had cleared up and a presystolic murmur had also developed. One afternoon, six weeks after admission, while sitting up in bed, he had suddenly been seized with intense dyspnea and had died in a few minutes. The variability of the quality and intensity of the murmur from day to day and the septic rise and fall of temperature had led him to the diagnosis of malignant endocarditis. Dr. R. J. Wilson had made three or four blood-cultures from this case. Every one of them had remained absolutely negative. The blood-count twenty-four hours after admission had been 8,600, four days later 16,600, one month later 7,600, and the day before death 6,200. The autopsy showed small hemorrhages beneath the pericardium and there were large clots adherent to the borders of the mitral segment and extending up into the auricles. Granulations on the valves were extensively blended with the clots. The spleen weighed 23 ounces and showed infarcts varying in age from a few hours to six weeks. Microscopical sections and cultures after death from the valves of the heart were absolutely negative. It was usually stated that malignant endocarditis is associated with a marked leucocytosis, and that this served to distinguish it from ordinary rheumatic endocarditis, but in this case, with one exception, the number of leucocytes was about normal. This patient had been seen during life by Dr. Janeway and he had made a diagnosis of malignant endocarditis.

Dr. S. Alexander asked for an explanation of the mode of introduction of the micro-organisms into the system in the first case.

Dr. Lambert said that this was a hard question to answer. It was known that leucocytes engulf bacteria and are subsequently set free by the death of the leucocytes. It was possible that in some such way micro-organisms may be introduced, but, of course, this was a mere supposition.

Dr. Alexander said that he had been making some investigations on phlegmonous cystitis and had found the mucous membrane intact on gross appearance.

Dr. R. J. Wilson said regarding the second case that he had made blood-cultures on four different occasions

and had used two ounces of blood. Each blood-culture had represented 15 minims. He would advise that there be no less than fifteen minims for each blood-culture and that several cultures be made simultaneously.

Tumor of the Prostate.—Dr. Charles Phelps presented a tumor of the prostate that had been removed three days ago by the perineal route alone. The patient was a man who had been suffering from vesical trouble for ten years. His trouble had begun with an attack of retention of urine, which had yielded without the use of instruments. Four years ago a physician in endeavoring to draw the urine had made a false passage and since that time the catheter had been used frequently—during the last six months every hour or two. Dr. Harlow Brooks had reported that sections had been taken from various portions of the mass, but that they had failed to show any malignant growth. It was a cystic adenoma of the prostate. There was a fair amount of increase in the interstitial tissue. The muscle tissue was relatively decreased, apparently from the overgrowth of the connective tissue. Some areas showed actual tissue necrosis. Evidences of inflammation were abundant in every portion of the specimen. Dr. Brooks had recently examined 34 prostates, and had come to the conclusion that these enlarged prostates are not new growths but the result of inflammatory processes. Dr. Phelps said that there had been a good deal of hemorrhage during the early part of the operation, but practically none after the prostate had been removed. He had made use of the transverse incision into the perineum and had not experienced special difficulty in removing this large tumor. About six weeks ago the man had had quite severe hemorrhages for a period of a week or ten days, but this had been the only time that there had been hemorrhages. The growth had obstructed the rectum, making defecation quite difficult.

Dr. Parker Syms asked if during the operation the prostatic urethra or any portion of the bladder had been torn.

Dr. Phelps replied that there had been no tear except in the prostatic urethra, and there was no injury of the bladder behind the prostate, and the opening, considering the size of the tumor, was remarkably small.

Dr. S. Alexander said that he had no doubt that prostatectomy would become the operation of choice in the near future for the relief of prostatic enlargement. The operative technic could certainly be improved. No one of the methods at present in vogue was perfect. The improvement would be coincident with a better knowledge by the operating surgeon of the anatomy of the prostate in health and in disease. He deprecated the making of dogmatic statements at the present time as to the merits of any operation. He said that, on account of the great variations in the shape of the enlarged prostate, whatever method was employed there would always be a necessity for the surgeon to exercise his judgment. He said that the specimen presented by Dr. Phelps was of great interest. It seemed to him, after a very brief examination of it, that the entire prostatic urethra had been removed up to the internal urethral orifice. He pointed out that the floor of the urethra along the veru-montanum was intact and he called attention to other anatomical landmarks and in this connection he requested Dr. Phelps to have the specimen examined very carefully, bearing these points in mind. Continuing, he said that some years ago he had claimed that by his method of performing prostatectomy he had preserved the entire prostatic urethra from the neck of the bladder down to the apex. He had subsequently found and called attention to the fact that he had been mistaken in this. He believed that the prostatic urethra from the neck of the bladder to the anterior margin of the veru-montanum could be preserved, but that the prostatic urethra in front of the veru-montanum was always torn in his operation. He said in order to avoid incontinence of urine it was of the utmost importance to preserve the roof of the prostatic urethra near its apex on account of the anatomical situation of the external prostatic sphincter. Dr. Alexander, speaking in regard to the pathological report on Dr. Phelps' specimen, said that it had been his experience that nearly every one could find evidence of the results of inflammation in the enlarged prostate of long-standing. He thought, however, that inflammation could not be regarded as the causative factor of enlargement. It seemed to him that it was much more likely that the evidences of inflammation were secondary. The theory that gonorrhea was the causative factor in most cases of prostatic enlargement seemed to him untenable.

Dr. R. Morris thought that perhaps surgeons had been too much afraid of removing a certain part of the prostatic urethra. Sometimes he had removed considerable sections of it in particular cases. It seemed to him not at all likely that dangerous stricture would occur at this point. If the floor would cover nicely with epithelium there would probably not be so much to be feared from the removal of a considerable portion of the prostatic urethra. He would like to know if troublesome constriction had been observed in such cases, for, certainly he had not seen it.

Dr. Alexander replied that there was no danger of stricture following prostatectomy. The danger was that incontinence might be caused.

Dr. Parker Syms said that in some of his prostatectomies he had torn through the entire prostatic urethra, though at the moment he had not known of the accident. All of the specimens, with one exception, had been examined microscopically to determine the amount of damage to the mucous membrane, and the result had been negative in those examinations. He had, however, torn through the urethra in the membranous portion and up to the neck of the bladder. His experience had been limited to thirteen cases, but in three there had been a more or less persistent incontinence of urine, though eventually all of these patients had regained control of the bladder.

Dr. G. D. Stewart said that in Dr. Phelps' case the urethra had been entered just at the membranous part. The larger part of the prostate had been enucleated from the right side, and he had taken away all of the floor of the prostatic urethra, but had left all of the roof. The opening into the bladder would barely admit the finger. He had had but little experience with prostatectomy—only six or seven cases, and several of these recent ones. Of three cases operated upon over six months ago he could recall two in which good recoveries were made with excellent control of the bladder; in another the patient was gaining, but had not thoroughly regained sphincteric control. It seemed to him that there was never any danger of stricture in prostatectomy, but chiefly of incontinence.

Dr. Phelps, in closing, said that his patient had not had gonorrhea until he had become infected from a septic catheter. As a consequence of this the man had lost one testicle.

The Roentgen Method in the Diagnosis of Renal and Ureteral Calculi.—Dr. C. L. Leonard, of Philadelphia, read this paper. [See page 305.]

Dr. Alexander said that he was glad to speak on this subject from the clinical standpoint as to the value of the work being done by those making a special study in this department. The longer he did special work himself in urinary disease the less he felt he knew

about certain methods. He was very glad indeed to avail himself of the knowledge of others, and he thought it would be well if physicians generally felt that way. As to the diagnosis of stone in the kidney, the speaker said that ureteral catheterism was talked about by so-called genito-urinary surgeons. It should be a routine in the surgical diagnosis of diseases of the kidney. In some cases catheterism of the kidney had proved very difficult in his hands, though others had succeeded readily in the same cases. He knew nothing about the complicated questions of photography and electricity involved in the use of the Roentgen rays, hence, he availed himself of the services of those who were familiar with this work. His chief difficulty had been in interpreting the Roentgen-ray pictures, and hence he relied very much upon the interpretations given by his friend, Dr. A. B. Johnson. He would not accept absolutely the findings of the X-ray, though believing it a valuable aid in diagnosis. In this respect he took the position that he did in regard to the diagnosis made by a person who examines urine and yet knows nothing about the clinical side of a given case. Dr. Alexander urged that cases demanding the use of the Roentgen rays should not be sent to an ordinary photographer, but to one who is a clinician as well as proficient in the use of the Roentgen rays. Taken in connection with other methods of examination, the Roentgen rays were exceedingly valuable. He recalled a case in which the X-ray picture gave a very strong shadow, yet there was some doubt as to its being a stone. The plate had been submitted to an anatomist of high standing, and he had decided that the position was such that it was probable that the stone was in the kidney. An operation had then been undertaken and the stone found. In two recent cases he had been certain from his clinical observations that there was a stone in the kidney, but the Roentgen rays had failed to find it. He had then treated these cases for a chronic follicular prostatitis, although the symptoms had pointed strongly to stone. He was glad to say that both cases had done well under this treatment, though without the aid of the Roentgen rays he would have felt called upon to operate for supposed stone. Mention was made of another case in which the kidney was undoubtedly enlarged and was well below the free border of the ribs. It was exceedingly tender. The ureter had been catheterized and a diagnosis made by one person of stone in the kidney, and by another of stricture. Dr. Johnson had assured him that there was no stone in this patient's kidney. The examination of the urine was negative. Since the woman had been assured that there was no danger of stone or of cancer the pain of which she had complained had disappeared.

Dr. Parker Syms said that his own experience had not been favorable as to the finality of the negative diagnosis of stone in the kidney by means of the X-ray, but he had been convinced that this was because of the difficulty of securing the services of one skilled, not only in taking the pictures, but in interpreting them. Many conditions present the symptoms of stone in the bladder or in the ureters, and it was important that the surgeon should be able to determine whether or not a stone is present. In one case in which the Roentgen rays had been resorted to by him no stone could be detected, yet almost immediately after the last exposure had been made the patient had passed a renal calculus, thus proving that the method of examination had been faulty. He hoped something more would be said by Dr. Leonard as to the details of the technic employed by him.

Dr. A. B. Johnson said there could be no question that the surgical world owed to Dr. Leonard the placing of the negative diagnosis of renal stones upon an absolutely solid foundation by means of the Roentgen ray; certainly more credit was due to him for the development of the method than to any one else. His own experience had extended over a comparatively short period, *i.e.*, eighteen months. Short as it was he would second an assertion, repeatedly made by Dr. Leonard, to the effect that, given a proper apparatus and the requisite knowledge and skill, enabling the operator not only to make the pictures but to interpret them rightly, a negative diagnosis can be made with absolute certainty. The reason the plates fail to show a stone in a case in which the stone is subsequently found, especially if the patient is of medium size and the stone of fair size, is that the plate taken by the operator is of such a quality as not to bring out the necessary details. Dr. Leonard had long ago pointed out that, unless the X-ray pictures did show a certain amount of tissue differentiation the extent of which could only be determined by experience, the plate was of no use for the purpose under discussion, although it might be able to show a large stone. The muscles on either side of the spine should show with great distinctness; the transverse processes of the last two ribs should show plainly; there should be considerable shadow of the soft parts, and usually some shadow of the kidney itself. These were the requisite qualities, and if present the stone would show. To obtain such negatives in a large, stout individual was not always easy. With a thick body it was necessary to increase the distance of the tube from the plate, or else run the risk of causing burns. This increased distance made the exposure longer. The picture must be exceptionally good to show a small stone in a stout person, and, as the exposure must be longer, one hesitated to take many pictures. Dr. Leonard insisted that the quality of the light given by a tube should be such as to show upon a photographic plate the greatest possible amount of tissue differentiation. This could only be done by the use of a "soft" or low-vacuum tube. A tube of high resistance and great penetration does not give as good results in this class of work. Dr. Leonard had placed an absolute limit on this resistance, using ordinarily a tube having a resistance of 1½ to 2 inches. With the particular apparatus used by him this might be all right, but with other apparatus and with other tubes precisely the same rays might be given off even though the resistance employed represented three or four inches. He understood that Dr. Leonard used almost exclusively Queen's self-adjusting tube. He had used this also, but preferred other tubes. With a larger tube, having considerably greater resistance, a much greater resistance in air could be used and yet the necessary detail be obtained in the picture. A number of cases had been cited in the paper in proof of the feasibility of detecting very minute stones in the ureter. Dr. Johnson said he would also cite a case in point. In his case there had been a shadow of a very small stone in the left ureter. A month or two later a second picture had shown that the stone had moved down. At the end of another month the stone was within an inch or two of the bladder, and about ten days later it had been passed spontaneously and was found to weigh only two grains. The value of the Roentgen-ray method was well exemplified by this case. Dr. Johnson then exhibited two typical lantern slides, one showing a very large stone in one kidney and one minute calculus in the ureter on the same side, and the other showing a stone in the ureter.

Dr. Alexander Lambert said that he had been struck with the statement made by the reader of the paper that in nine cases he had been able to assure the patient that the stone would pass and that an operation was unnecessary. This was a most gratifying advance in

surgery, both to the patient and to the physician, for, often it was a question whether the patient's condition was such as to justify a serious operation unless the latter were absolutely necessary.

Dr. Leonard, in closing the discussion, said that he had described in his paper the resistance of the tube he uses because with his apparatus this gave the best results. He had seen in Liverpool this summer a beautiful negative made with a tube representing a resistance of five inches. He agreed with Dr. Johnson that varying conditions would give different results, and that the resistance he had laid down would not hold for all operators. It was not possible to absolutely protect patients from X-ray burns because the nature of the agent used is not yet fully understood. A law had been recently passed in Austria requiring persons making X-ray examinations to be licensed for that purpose, and that most of the licences are granted to graduates in medicine. Dr. Leonard said that at the present time he places the patient on a table on the back, and places the tube above the third lumbar vertebra for the renal examination. He then uses the quality of light varying in resistance from 1½ to 2 inches in parallel spark, the resistance varying with the density of the individual and to be determined by experience. In making the pelvic picture he places the tube over the sacrum on a line joining the anterior superior spines, the tube being placed in such a way that the whole shadow of the pelvic outlet is cast upon the plate. The length of exposure and the distance of the tube from the plate vary with the thickness of the subject and the varying conditions found in individual cases. The exposure had varied in his cases from five to twenty minutes. He was now doing all his work with a four-inch spark coil, and getting more energy than formerly with a ten-inch coil. These coils had been built at his suggestion, to run from a motor generator or converter giving 20 volts and 10 to 15 amperes, and he had seen them give more energy than could be used. There were improvements constantly being made on the electrical side and in the technic and development of the Roentgen method of diagnosis.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, Held January 7, 1902.

The President, Joseph Collins, M.D., in the Chair.

Myasthenia Gravis Pseudoparalytica.—Dr. Frederick Peterson presented a woman, thirty-eight years of age, the mother of two children, who had been first seen by him in October, 1900. She had been sent to him by Dr. Knapp of Mount Vernon. For several weeks a difficulty in speech had been noted and also some dysphagia, the condition resembling, to a certain degree, bulbar paralysis. There was no history of specific disease or of intemperance. She had no pain, not even headache. Examination showed some weakening of one side of the mouth, slight deviation of the tongue to the right and a very peculiar manner of speech, a dysarthria that had no real resemblance to that of bulbar palsy, general paresis, multiple sclerosis or any of the common types of difficulty in speaking. It seemed almost as if it were assumed, or as of hysterical simulation. There was no atrophy of the lips or tongue, and no actual paralysis of any of the muscles or of the muscles of the throat. The gait was an imitation of a spastic gait, but without spasticity. She was anemic, very weak and with a weak pulse and heart. The pupils reacted normally. The knee-jerks were rather subtypical. There was no weakness of the eyelids, such as the ptosis described in many cases. She was pregnant and in March, 1901, gave birth to a normal child. She was seen again in May and in November, 1901. The condition of pseudospastic gait and pseudobulbar dysarthria remained unchanged at both of these examinations. There was quick exhaustion in mastication, speech, swallowing, walking, etc. This disease, the speaker said, was sometimes known as asthenic bulbar paralysis, asthenic paralysis, bulbar paralysis without anatomical lesion, or myasthenia gravis pseudoparalytica, and had been described by Erb, Oppenheim, Hoppe and many others. The symptom-complex in typical cases consisted of dysarthria, dysphagia and masticatory weakness, with corresponding paresis of the labial, glossal, palatal and masticatory muscles. The paresis might affect the upper facial muscles and those of the extremities. There was no atrophy and no signs of degenerative reaction. The sensorium remained free. The disease fluctuated from time to time as regards the severity of the symptoms. The sphincters and reflexes were not appreciably affected. The course might be periodic, acute, subacute or chronic. The prognosis was unfavorable, though patients had recovered. Several autopsies had been made with negative findings.

Dr. B. Sachs said that he had seen only one other case. In the one just presented, the clinical picture was so distinct that there could hardly be any doubt about the dagnosis. Evidently the cases were very rare, for they were not of a nature to be readily overlooked.

Dr. Joseph Collins said that he was under the impression that the case under discussion would eventually become an atypical one of glossolabial pharyngeal palsy. There was nothing in the case which reminded him of the cases of asthenic bulbar paralysis that he had seen. He would not include under asthenic bulbar paralysis any patient who presented the symptom-complex of a spastic paretic condition. It was entirely opposed to present knowledge of the disease to find exaggerated knee-jerks and tendon-jerks, and for this reason he would rule out the present case from the category of true asthenic bulbar paralysis. Moreover, the woman seemed to be beginning to develop atrophy of the lips. The first case of asthenic bulbar paralysis to be described in this country was one that he had long had under observation. That woman found that while she could chew one or two mouthfuls, she could not continue to do this. The same was true of muscular acts in general; there would be sudden evidence of exhaustion. Having gone through two or three critical periods characterized principally by the phenomena of surgical shock, she had practically recovered completely, inasmuch as there were no active symptoms of exhaustion present. Her facial muscles, though presenting no evidence of atrophy, still did not respond energetically to conscious stimuli and the gait was a somewhat shuffling one.

Dr. Peterson said that his first impression was that this was a case of true bulbar palsy, but in the year and a half which had elapsed since then there had been no true atrophy of the face, and no true spastic condition. The knee-jerks were active, but not exaggerated, and there was certainly no ankle clonus. It was very easy to demonstrate the presence of muscle exhaustion. It was, of course, possible that later the case might present the evdence of true bulbar palsy, but certainly it did not do so at present.

A Case of Morphea.—Dr. J. Fraenkel presented a young woman, thirty years of age, an artist by occupation. The family history was negative, and she had been well with the exception of a severe attack of malaria eight years ago. About five years ago blotches began to form along the course of the sciatic nerve, and were at first tender, but subsequently underwent

atrophy. When first seen by the speaker the examination of the nervous system was practically negative, but there were areas of atrophy of the skin. She had improved considerably since first coming under observation on January 29, 1901. His diagnosis was morphea or disseminated scleroderma.

Report of a Case of Spinal Cord Tumor Successfully Operated Upon.—Dr. Robert Abbe made this report. The patient was an athletic man, thirty-two years of age, who had been first seen in April, 1900. He had been well up to three years before, when after a fatiguing game of golf he was seized with pain between the shoulders. This disappeared within a few days. Subsequently he noticed that the fingers began to be numb and became flexed. Then the legs and arms became similarly affected. Dr. Dana prescribed large doses of iodide of potassium, thinking the case one of spinal cord tumor. Various consultants saw the case, but he became suddenly worse. When seen by Dr. Abbe, the fingers were tightly flexed into the palm. On April 30, 1900, he operated upon the spine, removing the laminæ of the fifth, sixth and seventh cervical, and the first, second and third dorsal vertebræ. A thin layer of a whitish substance was found bulging backward, and on cutting into it a dark tumor was revetled, which measured two inches in length and was attached to the anterior wall of the canal. On removing the tumor, the hemorrhage was not severe. Convalescence was uneventful. Some of the muscular and sensory conditions were improved. Dr. F. C. Wood, the pathologist of the hospital, reported that the tumor was a sarcoma of the spinal cord.

Dr. C. L. Dana's report of this case was also read. The symptoms began, this report stated, in 1896. They did not progress much until March, 1898. He had been first seen by Dr. Dana in October, 1898. There was exaggeration of the deep reflexes, ankle clonus and wrist clonus; there were occasional attacks of vertigo, and he was particularly sensitive to cold. There was no distinct differentiation of cutaneous sensations, though the temperature sense was rather more disturbed than the other senses. Just prior to the operation by Dr. Abbe the following condition was noted: There was total paraplegia with the legs greatly contractured; the hand was in the position of ulnar paralysis; the reflexes were all exaggerated. The right arm showed anesthesia to all forms of sensation; the left arm showed no anesthesia. Apparently the disease began in the eighth cervical and first dorsal segments of the cord. While spinal tumor had been suspected from the first, Dr. Dana said that he had been inclined to believe that there was some meningeal complication. On the whole, the picture at this time was very much like that of hypertrophic pachymeningitis. The operation revealed no meningeal complication; only tumor of the cord and the consequences of pressure.

Dr. V. P. Gibney said that he had seen this patient on June 6, 1900, and had found complete paralysis of the lower extremities associated with a high degree of spasm. The thighs were strongly flexed and the legs upon the thighs, so that the heels were pressed against the buttocks. On October 30, 1900, under gas and ether anesthesia, he had divided fascia and muscles about the hips, dividing the hamstrings and the Achilles tendon, and getting the limb into much better position. Plaster-of-Paris bandages were applied from the toes to the free ribs. A second operation was done on November 15, 1900, and by this still further correction was obtained. On January 3, 1901, all plaster dressings were removed, and posterior splints were employed in connection with traction. The spasm of the limbs grew less. On February 5th, Dr. M. Allen Starr saw the case and made a diagnosis of complete degeneration of the cord. When examined last fall it was found that the spasm was fast disappearing, and that there were little or no contractures about the joints. There was no evidence of recurrence of the tumor, and the result under the circumstances seemed to be all that could be expected.

Dr. B. Sachs said that he had reported about two years ago a case of sarcoma pressing upon the cauda equina which had been successfully operated upon. The diagnosis had been made from the area of pain and from the fact that pressure upon a definite region just to the right of the spinous process of the second lumbar vertebra caused exactly the same pain as that of which the patient complained. The diagnosis was confirmed at the operation, the tumor presenting in the incision. It was extradural and was completely enucleated. The spinal cord had not yet been invaded. If there were any reason to suspect spinal tumor the operation should be done early. In the case just referred to, if the operation had been postponed even for a short time the cord would have been invaded and paraplegia would have been the result. The inclination of the neurologists to make a diagnosis of pachymeningitis did not seem surprising, and was to be explained by the length of the tumor. Even if the case were one of pachymeningitis he did not think any harm could be done by an exploratory laminectomy.

Dr. Abbe, in answer to questions, said that the tumor was intradural, that it started in the medullary tissue and extended into the spinal canal, not into the vertebral canal, and distended the spinal cord.

Dr. Joseph Collins said that the neurologists had heretofore relied too largely upon pain in making a diagnosis of spinal cord tumor, although probably the majority of such tumors were associated with pain. He now had under observation a patient in whom the symptom-complex was an ataxic paraplegia, and he was beginning to think that the case was really one of sarcoma. Seven or eight years ago he had seen in the Hospital for Nervous Diseases a case that had been diagnosed as pachymeningitis, but some months later he had made the autopsy, and had found a tumor which could have been very easily removed by operation.

Scleroderma and Sclerodactylitis, with Some Remarks on Its Therapeutics.—Dr. B. Sachs read a paper with this title. He said that most neurologists seemed disposed to accept the theory that this disease was an angiotrophoneurosis, though many were inclined to look upon it as originally a nervous disorder. It was certainly not a purely spinal affection. There was a typical fascies of scleroderma, enabling one to make the diagnosis at first glance; he referred to the peculiarly thin nose, the hollow cheeks and the retracted lip. All sorts of therapeutic measures had been adopted without much benefit. Among the remedies which had proved of decided benefit in certain cases was thyroid extract. The first case reported by Dr. Sachs was that of a woman, fifty-four years of age, who had been first seen in November, 1891. The symptoms of scleroderma had developed four years previously. Many dermatologists had seen her and prescribed for her without the slightest benefit to the scleroderma. Thyroid extract was prescribed, and it benefited her so greatly that she continued its use without permission. When seen again some time afterward she was greatly emaciated, but all of the symptoms of scleroderma had disappeared. She was directed to stop the thyroid extract at once, and after a time to resume it, taking two grains three times a day. The speaker said that he had seen her only recently and had found her perfectly well, though it was necessary to keep up small doses of the extract or the symptoms

of scleroderma would return. The second case was that of a young woman of twenty-four, who had also been benefited by this treatment. A radiograph of this patient's hands was exhibited to show the attenuation of the bones. Another case was interesting in that the scleroderma followed an injury, the piercing of the hand by falling upon a letter file. Eight months after this injury the skin of the hands became hard, discolored and tense, and the condition was aggravated by cold weather. An X-ray picture showed no changes in the bony structures. There was such slight benefit from the thyroid extract that it was discontinued, and the man's condition remains at present unchanged.

Dr. E. B. Bronson said that a distinction should be made between simple idiopathic atrophy of the skin and scleroderma. Circumscribed atrophies of the skin occurred in various places, and although they might present a hardness it was very different from the hardness of scleroderma because there was a thinning and an atrophy which was not present in scleroderma. Scleroderma was very frequently followed by atrophy, but atrophy was not an essential part of the disease. In the so-called diffuse form there was no change in the appearance of the skin in a typical case, and the change was noted only by the sense of touch. The cases reported in the paper were of the diffuse variety, but this class of cases could be conveniently divided into a limited and a universal form. The more or less limited diffuse form came on rather suddenly after an exposure to cold or after an injury, and at first the functions of the part and the appearance were not changed, but the sense of touch would enable the physician to at once recognize the existence of scleroderma. The generalized diffuse form sometimes followed exposure, but it was more commonly due to some central trouble. It was only after some atrophic changes had taken place that there was visible loss of substance. At the stage of maturity the face of such a person was not shrunken, according to his experience—in other words, the contour was not altered, but expression was entirely wanting. The circumscribed form of scleroderma was totally different, and was called by the English by the rather absurd name of morphea. Instead of being ill-defined at the margin it was sharply limited, and was usually associated with a change of color, as a rule being darker than the surrounding skin. It often presented a lilac border. In this form there was simply a scleroderma without atrophy. In most of these cases recovery was spontaneous. Some years ago he had observed a peculiar case in which the diffuse form had been converted into the circumscribed variety or morphea.

Dr. Joseph Fraenkel said that he had seen altogether nine cases of scleroderma, and had become impressed with the idea that this term included several different conditions. There were three types, the circumscribed, the generalized and the secondary forms resulting from arteriosclerosis, chronic rheumatism and very many other causes. An example of the secondary form was a case in which the patient suffered from myocarditis and angina pectoris. There finally developed along the inner aspect of the left arm a line of induration of the skin, which ultimately became atrophied. The only variety which seemed to yield readily to the thyroid extract was the circumscribed form.

Dr. B. Sachs said that the name scleroderma was rather unfortunate, because it was evident from the radiographs presented that other tissues besides the skin were affected, only the muscular tissue seeming to be exempt. The cases described by Dr. Bronson had probably been observed in the early or middle stages of the disease. A point of value in the diagnosis was the absolute immobility of the skin, the latter appearing to be glued to the part underneath. In his cases he had used only the powdered thyroid gland, given in capsules, for, in previous years he had found the extract entirely unreliable.

BOOK REVIEWS.

PHOTOGRAPHIC ATLAS OF THE DISEASES OF THE SKIN. By GEORGE HENRY FOX, A.M., M.D., Parts VI., VII., J. B. Lippincott Company, Philadelphia and London.

IN these two latest fascicles of this very desirable work the following diseases are described and illustrated: Impetigo contagiosa, lupus serpiginosus, syphiloderma pustulosum, purpura, eczema cruris, pityriasis seborrhœica, chromophytosis guttata, psoriasis gyrata, pityriasis diffusa and fibroma.

We can but reiterate our pleasure in being able to endorse this work most heartily. It is the best for its purposes with which we are acquainted.

REGIONAL ANATOMY OF THE HEAD AND NECK. For Students and Practitioners of Dentistry. By WILLIAM T. ECKLEY, M.D., and CORINNE BUFORD ECKLEY. Lea Brothers & Co., Philadelphia and New York.

THIS book might be regarded as distinctly an application of anatomy to the science of dentistry. There are in it, however, a large number of facts which one does not often see so well tabulated in books on medical anatomy, although such facts are of importance to the surgeon and physician. An example of this is found in the discussion of trifacial neuralgia. Here the author enumerates all the possible sources of its intrinsic reflex pain and specifies a system of examination for the source of such pain which involves a perfect knowledge of the distribution of that nerve. One feature of the book is the collection of a series of valuable questions at the end of each chapter. While few of the more minute points of anatomy are touched upon by the book, it will be valuable to anyone as a means of reference or for diagnostic purposes.

BOOKS RECEIVED.

The MEDICAL NEWS *acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the* MEDICAL NEWS *will shortly appear.*

THE POCKET GRAY. Fifth Edition, Edited by Dr. C. H. Fagge. 12mo, 269 pages. William Wood & Co., New York.

A MANUAL OF CLINICAL DIAGNOSIS. By Dr. Charles E. Simon. Fourth Edition. 8vo, 600 pages. Illustrated. Lea Brothers & Co., New York and Philadelphia.

MOSQUITO BRIGADES AND HOW TO ORGANIZE THEM. By Dr. Ronald Ross. 8vo, 100 pages. Illustrated. Longmans, Green & Co., New York.

A BRIEF MANUAL OF PRESCRIPTION WRITING. By Dr. M. L. Neff. Demi 8vo, 72 pages. F. A. Davis Company, Philadelphia.

A GUIDE TO THE MICROSCOPIC EXAMINATION OF THE EYE. By Dr. R. Greeff. Translated by Dr. H. Walker. Demi 8vo, 171 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.

THE MEDICAL NEWS POCKET FORMULARY. Lea Brothers & Co., New York and Philadelphia.

A MANUAL OF BACTERIOLOGY. Dy Dr. H. V. Williams. 8vo, 290 pages. Illustrated. P. Blakiston's Son & Co., Philadelphia.